How do children and young people learn about alcohol

A major review of the literature

For the Joseph Rowntree Foundation

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Key Points / Executive Summary

1. **By the time they start to drink alcohol, children already know a great deal, and have well developed attitudes, expectations, and intentions, about alcohol.**
2. **This knowledge and these attitudes, expectations and intentions, have been acquired and developed through a process of socialisation, involving significant influence from parents and other family members such as siblings etc, peers, advertising and media representations, and other important influences such as school, community, and religious and cultural influences.**
3. **Children learn about alcohol from an extremely young age. As with many other areas, this learning follows a developmental trajectory. They learn a great deal from the media and other representations, but basic attitudes and intentions will *initially* be most influenced by parents.**
4. **Knowledge and expectancies will not necessarily be so predominantly influenced by parents. They may learn a great deal about alcohol, and acquire expectancies of what will happen if they drink, from the media or from other adults. However, their attitudes and intentions towards this knowledge and these expectancies will be initially primarily determined by their families – especially their parents, but including a host of other important family influences as well, such as grandparents, siblings, etc, depending on how these other family influences are considered by the family subculture.**
5. **Key family processes and structures which have been shown to influence the development of knowledge, attitudes and subsequent behaviour towards alcohol include 'Parenting Style': responsive parenting** (parents who expect a lot from their children, and provide them with a sense of self-efficacy), **consistent child-management practices** (balancing the two dimensions of 'care' and 'control') **involving having clear and consistent rules** (which are enforced) **and high levels of parental supervision or monitoring** (ie knowing where children are and what they are doing), **parental modelling of appropriate alcohol use**, and **clear and open communication of both expectations about alcohol use** (or non-use) and **potential disapproval if expectations are not met; as well as a**

number of other areas including family cohesion, more family support, higher levels of family bonding (including family regularly eating an evening meal together, five or more times per week), **a child liking or being satisfied with relationships with a parent**, **a child wanting to be like a parent**, and **a high level of family co-operation**. Sibling behaviour is also important: **older siblings' *willingness* to use substances**, and **their *actual* substance use**, are both robust predictors of their younger sibling's later use.

6. **Although there is less consensus about the influence of peers, it is clear that although peers are influential, a key peer process is peer selection: it is not so much that young people are *influenced* by their peers but that they select like-minded peers and that a process of *mutual influence* occurs.**
7. **The direct (advertising) and indirect (media representations, product placements, etc) marketing and cultural representations of alcohol have also been shown to exert a very significant influence on the development of young peoples' knowledge, attitudes and subsequent behaviour**, with well-designed longitudinal studies showing that the advertising and marketing of alcohol are significant factors in the rise in consumption of alcohol by young people. Not surprisingly, **young people who see, hear and read more alcohol advertisements and endorsements are more likely to drink and to drink more heavily than their peers**.
8. **When looking at the relative weight that each of these major aspects have, there are more contradictory results and less consensus.**
    - **In terms of the relative weight of family versus peer influences, it is clear both that peers do exert a significant influence, but that (as mentioned above) peer selection is a major factor, and that the family has an important role in enabling young people to *select who their peers are***: hence if they select peers who are themselves less likely to use substances, there is a powerful parental influence at work. Even after initial experimentation with alcohol or drugs has occurred, parental influence may exert itself indirectly through choice of friends by the adolescent, and through their level of self-esteem which again is predicted by both family and school climates. Family and peer groups have become increasingly recognised as mutually influential and interdependent, and rather than searching to determine which influences dominate the likelihood of substance use in young

people, a more productive approach may be to examine how these two forces interact. Certainly it seems likely that there has been an overemphasis on overt peer *pressure* (and how to overcome that) as opposed to seeing the process (and hence the skills needed by young people) as being far more complex than that simplistic analysis. Also, adolescents' susceptibility to various sources of interpersonal influence has been found to vary at different stages of involvement with substances, with the influence of parents being strongest (even crucial) preceding initiation into adolescent use. The transmission of cultural values from parent to child seems to be important and younger adolescents who are still non-users are more susceptible to the influence of their parents as models and sources of authority; young people who enjoy a more positive relationship with their parents may be less influenced by substance-using peers, and consequently be less involved in drug-using activities. Similarly, the family can continue to be a moderating influence throughout adolescence and even young adulthood, and parents usually affect *long-term* goals and values as well.

- There has been only a small amount of work looking at **the relative weight of family, peer and media / marketing / advertising influences.** It is generally accepted that frequent exposure to persuasive alcohol portrayals via a huge range of media, both in direct advertising and via indirect means, has a major impact on children's developing knowledge, attitudes, intentions and then subsequent behaviour. Although findings are somewhat mixed, it is also generally accepted that the impact of these portrayals can be mediated by the range of parental and family factors reviewed above, and that especially parental reinforcement and counter-reinforcement of messages, open communication, parental monitoring, and clear rules, can help to offset some of these media socialisation effects. **It can be concluded that the influence of these media and other global socialisations are massive, and have impacted on the influence that these parental and family relationships have, especially with children / young people where family controls are less apparent.**

9. **These influences are also affected by other major forces, notably, country, ethnicity and race, religion, socio-economic status, and other cultural factors.**

- **Country:** It has been known for some time that drinking patterns are highly influenced by culture. This occurs at many levels: there is an overall national culture which determines what the collective norms are for drinking behaviour, and within that overall culture there are various subcultures within which a young person will grow up which will further impact on their knowledge, attitudes and later drinking behaviour. The national drinking culture plays a prominent role in setting norms and expectancies around drinking, including expectations over age of initiation into drinking and expected quantities and frequencies of drinking, as well as behaviours to be exhibited when drunk. Nevertheless, national drinking cultures also change, and recent findings have suggested that a general pattern of earlier initiated, frequent, low quantity, low problems alcohol use by young people in Mediterranean countries compared to older initiated, less frequent, higher quantity, higher problems use in Scandinavian countries (with the UK being somewhere in the middle of these two patterns) is changing. These data also show a major change in the drinking of young people within the UK, with a strong rise in consumption levels: this drinking by UK teenagers has altered much more drastically than in other European countries. Historically, national culture also determined the relative likelihood of women and girls drinking and getting drunk, with rates for males far exceeding rates for females. This too is changing in the UK: recent figures show that, in the UK, Ireland and the Isle of Man, teenage girls were more likely than teenage boys to have consumed alcohol in binges. Internationally too, young people seem to be developing a more globalised view of drinking, which mirrors the globalisation of youth culture, fuelled by common media (the marketing of TV programmes and films worldwide, globalisation of music, etc) and an internet which has few cultural and national barriers. This, coupled with the increasing globalisation of alcohol advertising and marketing, means that many young people are modelling their drinking behaviour not on their parental or cultural stereotypes, but on a view of heavy drinking which is not rooted within their own culture. This in part explains why so many young people no longer drink the beverages traditional with their country or region (wine in France, ale in the UK, spirits in Scandinavia) but increasingly drink bottled lagers, and alcopops and their successors (premixed spirit-based drinks). Nevertheless,

although there are strong national cultural differences in when, how and how much young people should drink, and although there is an increasing globalisation of young people's drinking behaviour, the influence on these behaviours of family and peer factors is generally similar across countries.

- **Ethnicity and Race**: The limited amount of research in the UK into ethnic variation in drinking attitudes and behaviour among adolescents suggests that some non-White groups were less likely than Whites to drink alcohol, and to drink frequently. There is some evidence to suggest that Black African and Black Caribbean young people drink at somewhat reduced levels compared to White, and that those from the Indian sub-continent, especially from the more Muslim areas such as Pakistan, Bangladesh, and Bengal, but also including Hindu and Sikh young people, drink at a very much reduced rate and hold much less favourable attitudes to drinking alcohol than their White counterparts. Almost all work supports these finding that those from the Indian sub-continent drink the least and have the least favourable attitudes to drinking. Most work suggests that White young people report higher levels of substance use, those originating from the Indian sub-continent report lower levels, and Black African and Black Caribbean young people lie between the two extremes. There is conflicting evidence however about Black Caribbean youth suggesting that in some cohorts, Black Caribbean, and those of mixed race, seem at highest risk of regular drinking, even more than White young people. It also seems likely that familial, religious and peer influence closely correlated with ethnicity, with factors independently associated with lower risk of regular drinking being birth outside the United Kingdom, Muslim religion, and higher family social support. Nevertheless, the vast majority of studies of ethnicity and drinking suffer from two severe problems: they confuse race and ethnicity, and they frequently pool a wide range of ethnic groupings and races into one 'minority ethnic' grouping.
- The various family, peer and media factors described above are influenced by ethnic grouping in a variety of ways, although almost all of this research originates from outside the UK, with most coming from the USA. Although it is problematic to generalise from the USA (where issues of ethnicity are dealt with very differently to the UK and hence the experience of being part of a

minority ethic group will probably be different too) these studies do demonstrate that, at least for minority ethnic groups in the USA, many of the same factors identified in the earlier parts of this review are equally important and independently associated with lower risk of regular drinking (*family factors* such as parental monitoring, perceived consequences, maintaining intimacy and connection to the family, family cohesion, family connectedness, family supervision, low sibling willingness to use, parental attitudes toward their child's alcohol use, parent and adult-relative provision of alcohol (for older children), drinking with a parent (again for older children), and greater levels of family social support; *individual factors* such as better decision-making skills, higher self-efficacy, lower peer pressure susceptibility, more positive attitudes about school, prior school success, negative drinking expectancies, having low normative expectations of peer drinking, and of adult drinking; and *peer factors* such as having few friends who drink). Nevertheless, some studies have shown that the effects of some of these factors differs across some ethnic groups, suggesting for example that the parents of African American children in the USA more frequently speak to their children about alcohol and substance use than Caucasian parents, and establish clear rules for drug use, including contingent consequences for breaking the rules.

- **Religion**: There has been even less research in the UK on the relationship between religion and attitudes and behaviour towards alcohol than there has been on ethnicity. What little research there has been suggests that religious identification is a significant indicator of whether people drink or not, and indeed is often more important than other cultural or social factors. For those who do consume alcohol, religious identification is associated with less risky drinking. There is a consensus that being a Muslim means that individuals are significantly less likely to drink, although some studies also report that people holding any of the religions prominent within the Indian subcontinent have a markedly lower alcohol consumption that do British Whites (presumably mainly non-practising Christians or not affiliated to any religion). There is also some suggestion that young people from the Indian sub-continent may be drinking more than previous generations, and that drinking patterns among young 'non-White' (and Jewish) teenagers may be changing alongside those

of their White peers. Nevertheless, great caution needs to be adopted in interpreting the research on the relationship between ethnicity and religion, mainly due to the lack of sophistication shown by many researchers over different religions and ethnic statuses.

- On the other hand, the research into the impact of religiosity within any one ethnic group on alcohol consumption shows greater consensus. Although much of the research in this area has come from the USA, where religion in general plays a more dominant role in people's lives than in the UK, there are still generalisable findings. Religiosity and active religious involvement appear to have a protective effect on young people's drinking. Religious attendance seems to predict decreases in the quantity and frequency of alcohol use. Religion seems to provide resilience against teenage alcohol use; and teenagers showing greater religious involvement (eg frequency of attendance at religious services) and stronger religious values (eg belief in relying upon their religious beliefs to guide day-to-day living) have a lower risk of alcohol use. Others have also looked at religiosity as a protective factor against other risks, finding that religious affiliation, organisational religious activity, and self-rated religiousness were all associated with lower rates of smoking initiation; that religious coping predicted a significant reduction in number of drugs used, frequency of drug use, and problems associated with drug use; that parents thought that church involvement was important in preventing high-risk behaviours; and religious identity is inversely associated with regular smoking.
- As well as studies looking at the direct relationship between religion or religiosity and alcohol, there have also been a few studies looking at how these variables interact with the various family, peer and media factors described above. These studies suggest that familial, religious and peer influences are all closely correlated with ethnicity; and that mostly Moslem young people show lower levels of substance use, including drinking, coupled with higher levels of religious and familial, and lower levels of peer, involvement, as compared to White, Black African and Black Caribbean young people, most of whom may be presumed to be either Christian, or of no fixed or practising religion. Other studies have shown that religious *attendance* predicts

decreases in the quantity and frequency of alcohol use even in the presence of peer, family, and school variables; but that peer, family, and school influences are of more importance than religious *salience* ('How important is your religion?') in relation to later decisions to use alcohol, implying that, for religious salience but not for religious attendance, the range of influences discussed earlier in this review are more important.

- **Socio-Economic Status**: There is very little primary research into the impact of socio-economic status (SES) or social class on young people's drinking: either their learning about it or their subsequent drinking behaviour. Evidence from periodic national surveys of drinking show that although the heaviest male drinkers are in the higher income brackets, there is evidence to show that problem drinking is twice as common in the poorest socio-economic groups. There is some evidence that binge drinking is most prevalent among young men in manual occupations who had not pursued their education beyond secondary school, and that heavy sessional drinking and heavier weekly drinking are positively associated with living in a working-class school catchment area. One major systematic review showed that there is little consistent evidence to support an association between lower childhood SES and later (mis)use of alcohol: they concluded that there was little robust evidence to support the assumption that childhood disadvantage is associated with later alcohol use/abuse, although they stress that the *lack of evidence* to support an association between SES in early life and later alcohol use cannot be taken as *confirming the absence of an association*.
- **Other societal or cultural factors – Sport and other extra-curricular activities**: Sport and other extra-curricular activities (such as membership of youth groups/ teams) have been found to be important. In general, young people involved in extra-curricular activities including sport are less likely to have problems with alcohol or to be involved in risky drinking (bingeing, high frequency drinking, drinking outdoors); conversely, young people who do not become involved in such activities are more likely to initiate alcohol use early. Young people who are higher on a variety of measures (use of time [religion], family communication, peer role models, making responsible choices, good

health practices [exercise/nutrition], aspirations for the future, community involvement) are all less likely to use alcohol or drugs.

- **Resilience**: In many ways these characteristic and the influences of religion, sport, and strong family bonds, can all be seen as protective factors, which increase a young person's resilience; and enable them to withstand some or all of any risk factors that they might also have. There is a clear relationship between the number of resilience factors young people have and a reduced chance of a child starting to act in a risky fashion in terms of both alcohol and other high risk behaviours.
- **Culture**: In many ways, 'culture' can be seen as an overall term for many of those elements above – country/nationality/regionality, ethnicity, religion, socio-economic status, class, income level – and as such many of the conclusions already reached are apposite here too. One further area is that of cultural norms, which describe ways in which alcohol should or should not be used: there are many culturally distinct patterns of drinking between northern and southern Europe, in different Asian countries, with indigenous people, and within Latin America and Sub-Saharan Africa. As in other areas of social behaviour, how each individual sits within the overall group, and within their sub-group(s), will determine to a large extent whether they acquiesce with the group or cultural norms, or whether they decide to do something different – which in terms of society's attitudes to young people and their decisions to 'be different' to their parents is often seen as youthful rebellion (leading to regular 'moral panics' about their behaviours. Another area is that of 'place' or geographical location: the dynamics of neighbourhood and the ways in which the social history and linked physical characteristics of areas of residence may have a significant influence on how people drink alcohol. The one study in the UK which has looked at this identified clear differences in tolerance thresholds and expectations of appropriate behaviour between the urban and rural areas they investigated. Because they found that 'home' was increasingly where young people learned to drink, they argued that young people's drinking habits need to be understood and addressed in relation to their parents' attitudes to and use of alcohol, and the wider changing nature of intergenerational relationships and parenting practices.

- **The role of culture and ethnicity in initiation and maintenance of drinking**: each of these issues above cannot be examined isolation. There is a clear need to address the more complex questions of the meaning and value of drinking of alcohol in the lives of 12–17-year-olds; and one of the key tasks of adolescence in the UK is to learn how to use alcohol appropriately. This task will be influenced by the cultural, religious, national, ethnic and other issues outlined above, and above all of these, it will be influenced by the family, peer and media influences reviewed earlier.

10. **As children grow, the primary influences usually change, away from parental influence and more towards societal as a whole, and then towards peer influence; but parental and family factors (monitoring, management, communication, and so on) hold huge sway over how much influence these other factors have, and at which stages they will start to predominate.**
11. **Similarly, as young people grow older, their involvement in various aspects of their community (religion, sport, community activism, etc) also play a prominent role in their relationship towards alcohol, again heavily influenced by the same parental (and later peer) factors already discussed.**
12. **Some of these ideas outlined above have been used to develop interventions, and these interventions serve as a good test of whether the ideas are correct. If the interventions 'work', then it adds weight to our belief in the ideas behind them; if they do not 'work', then further research is needed to clarify whether the original ideas were incorrect, or if other, as yet un-theorised processes, have interfered with the intervention.**
13. **Of all of the interventions which have been tried, ones based on the family have the best evidence for their efficacy, implying that the theories which place the family's influence as central are being supported. One major systematic review of psychosocial and education-based alcohol misuse primary prevention programmes among young people found that family-based programmes (and especially the Strengthening Families Programme [SFP]) were the only primary alcohol prevention programmes to show longer-term results in the alcohol field. Another showed that family-based prevention approaches have effect sizes 2–9 times greater than approaches that are solely child focused (eg schools-based, peer-based, or individual based). There is however some evidence that a combination of family- and**

child-focused approaches might work well (and indeed the SFP works in this way).

14. **These family-based interventions generally have worked on a number of aspects of family processes aimed at enhancing family bonding and relationships; including skills training on parent supportiveness of children, parent-child communication, parental involvement, and parental monitoring and supervision; and practice in developing, discussing, and enforcing family policies on substance misuse. The SFP has separate components for both parents and children independently, and a third component for both parents and children together. The programme is designed to develop a number of specific protective factors, including the development in parents of improved communication styles with their children, improved parental rule-setting, disciplining and management of inter-generational relationships, a more nurturing and supportive parenting style, greater school involvement, and a greater use of contingent parenting; and the development in children of positive goals for the future, a far greater incidence of following rules, improved family communication, improved relationship with parents, stress management, and skills for dealing with peer pressure and refusal of alcohol or drug offers.**
15. **Although many family interventions are relatively complex, aiming to improve a wide range of family, parent–child and parenting behaviours, one recent study suggested that the single most important thing that parents needed to do was to regularly and frequently (five times per week or more) eat dinner with their children. This study suggested that this relatively simple intervention worked to effectively protect children not only from substance misuse, but also from poor school and academic performance, shown to be an independent factor related to many poor outcomes, including early substance misuse. Obviously, 'family dinners' work here as a proxy for a range of other variables: what is likely to occur when families eat together every or almost every night is that all the other important variables such as family communication and family joint activity also improve. It may be that persuading families to eat together could work as an important proxy for these other vital family factors, and one that is far easier to encourage in the**

general population than re-training communication, rules, contingencies, and so on.

16. **However, one problem with all universal family interventions is recruiting and retaining parents into the programmes. One reason for this might be that, despite the research evidence, parents do not have a strong sense of the importance of parental influence and modelling of behaviour on subsequent behaviour in their children. The present review concludes that it is of primary importance to educate parents about the effects of their own behaviour in influencing young people's use of alcohol or drugs. Programmes which work with parents need to equip parents with three sorts of skills: parenting skills giving parents the skills to develop family cohesion, clear communication channels, high-quality supervision and the ability to resolve conflicts; substance-related skills providing parents with accurate information and highlighting the need to model the attitudes and behaviour they wish to impart; and confidence skills to enable parents to communicate with their children about drugs.**
17. **There is some, although less strong, evidence suggesting that interventions based around altering peer influence can work, either by improving young people's skill to resist peer pressure, or by improving their skills in dealing with general life issues, or by recruiting and engaging with peers to train them to become educators and attitude-formation leaders. The interventions that appear to work best are those that are interlinked with ones that also involve the family. This also corroborates the findings from the earlier sections of the review, which showed that peer influences were more short-term than family ones, and that the family also exerted a significant effect on who young people select and maintain as friends in the first place.**
18. **There have been very few preventative interventions based on the ideas of the dominance of media and cultural representations of alcohol, meaning that it is not possible to come to any even tentative conclusions about this area from such intervention studies. However, the wealth of evidence outlined in the section on advertising and the media suggest that these are indeed dominating influences on young people's knowledge, attitudes and then behaviour towards alcohol. Multi-component interventions have also been**

used and these, especially the ones that have used family interventions as one of the components, have also been effective.

19. **Finally, all previous reviews as well as the present one reach the conclusion that there is a major lack of robust UK-based evaluations of prevention interventions and programmes, whether oriented towards alcohol initiation, general substance initiation, or later patterns of drinking. It is clear that more research is required (and hence to be funded) in the UK to undertake medium-term, longitudinal studies into a range of family, school-based, community-based programmes (including mass media campaigns as a part of multi-component prevention programmes) to allow some understanding of what works in a range of UK settings.**
20. **Implications for future interventions are explored. The review concludes that young people's norms about drinking need to be changed, as do adults' and society's. A range of suggestions is laid out for how these might be changed, and for how a universal prevention programme might be developed and delivered.**
21. **Programmes need to: delay the onset of drinking; provide coherent messages about which age is appropriate for parents to introduce their children to alcohol; help parents to realise that it is a good thing to delay the onset of drinking and that there are things that they can do to achieve this; change children's and young people's norms about drinking; get parents to provide alcohol to young people and to supervise their drinking when they do start. The task is to replace the cultural norm of (and therefore the resulting peer support for) bingeing and other forms of drinking dangerously, with positive parental role models for sensible alcohol consumption.**
22. **As well as the elements about drinking, programmes also need to encourage parents to create a strong family life and family bonds, family values and family concern, family rules and family supervision, and a balance between family care and family control. Parents may need help with this, implying a need for a universal prevention programme, which needs to be started when children are young, not when families are starting to consider how to prevent teenage drinking.**
23. **Another way that cultural norms about age of onset and regularity of excessive drinking need to be altered is via improving the enforcement of**

restrictions on alcohol purchasing for young people. This relates to the wider issue of alcohol and its availability and affordability to children. Recommendations to start to deal with these issues include: an increased use of test purchasing and greater investment in policing underage sales; increased enforcement of immediate and severe penalties for every individual or establishment found to be selling alcohol to young people; universal adoption of age checks for individuals purchasing alcohol who look under 21; advice to parents about monitoring the income and expenditure of children so that there is a better understanding about how much money children have and whether it is being spent appropriately.

24. **What is needed is an integrated, planned and implemented community prevention system, which draws together what is known about effective parenting training programmes, organisational change programmes in schools, classroom organisation, management, and instructional strategies, classroom curricula for social and emotional competence promotion, multi-component programmes based in schools, mentoring, community mobilisation, community/school policies, enforcement of laws relating to underage purchasing and selling alcohol to intoxicated people, altering community and cultural norms so that drunken behaviour is not tolerated (and certainly not encouraged), and how to effect policy changes with respect to price, availability and accessibility, and to implement them in a planned fashion. There is evidence that, if integrated multi-component programmes are undertaken, then outcomes can be much superior, and the programmes can be very effective, although there have been no research projects funded to allow for evaluations of sufficient power to test these ideas in a UK context.**
25. **Future research needs are outlined.**

Introduction: How do children learn about alcohol?

Young people and alcohol

There is considerable current concern, in the UK and worldwide, about young people's drinking. The IAS Fact Sheet on 'Adolescence and Alcohol' (IAS, 2006) provides a useful summary of why this is.

> "*In the interwar period in the UK young people aged 18–24 were the lightest drinkers in the adult population and the group most likely to abstain. Nor did alcohol play a significant part in the youth culture that came into existence in the 1950s, this being more likely to involve the coffee bar than the pub. It was not until the 1960s that pubs and drinking became an integral part of the youth scene. By the 1980s, those aged 18–24 years had become the heaviest drinkers in the population, and the group least likely to abstain. By the year 2002, hazardous drinking i.e. drinking bringing the risk of physical or psychological harm now or in the future, was most prevalent in teenagers and young adults. In women, hazardous drinking reached its peak in the age group 16–19, with just under one third (32%) having a hazardous drinking pattern. In men the peak was found in the 20–24 age group, with just under two thirds (62%) having a hazardous drinking pattern. These changes were accompanied by a decline in the age of onset of regular drinking. Nowadays, most young people are drinking regularly, though not necessarily frequently, by the age of 14 or 15. One survey found that more than a quarter of boys aged 9–10 and a third of those a year older reported drinking alcohol at least once in the previous week, normally at home. Most surveys suggest that there is a growing trend of drinking for effect and drinking to intoxication. A related aspect is the partial merging of the alcohol and drug scenes in the context of youth culture, with alcohol being one of a range of psychoactive products now available on the recreational drug market. A large survey of teenagers in England, Wales and Scotland found that by age 15/16 binge drinking is common, as is being 'seriously drunk.' In this study, binge drinking was defined as consuming five or more alcoholic drinks in a single session. The growth in binge drinking may be regarded as particularly significant as there is evidence that drinking,*

> *and especially heavier drinking, in adolescence increases the likelihood of binge drinking continuing through adult life*." (IAS, 2006, pp 1–2)

Starting to drink

Young people start to drink at an early age. In the UK, Jahoda and Cramond (1972) showed that, even as far back as 1972, drinking started between the ages of 10 and 14, and Cameron et al (2003), in their study of expectations about alcohol, showed that over half of the 8-year-old children had tasted some type of alcohol, and that more than three-quarters of the 10-year-olds had done so. This increase between 8 and 10 was significant for each type of alcohol: beer, wine and champagne (Australian champagne, as this study was conducted in Australia). Jefferson et al (2007) report that data from UK national surveys of drinking behaviour in young people indicate that by the age of 15–16 years, the majority of young people have tried their first alcoholic drink. NCSR/NFER (2007) showed that in 2006, almost half (46 per cent) of the young people aged between 11 and 15 surveyed said they had never had a proper alcoholic drink. Research published in 2007 by OFCOM and the Advertising Standards Authority (OFCOM/ASA, 2007) found that both the proportion of 11 to 13-year-olds in the UK who have never drunk alcohol had increased from 31 per cent in 2005 to 46 per cent in 2007, and that alcopops have declined in popularity: between 2005 and 2007, there has been an 11 per cent drop across all ages of those who claim to have drunk alcopops in the last six months.

Of those who had drank alcohol, however, significant numbers were drinking regularly: NCSR/NFER (2007) showed that in 2006, 21 per cent of young people aged between 11 and 15 drank alcohol in the previous week, dropping from 26 per cent in 2001. In 2006, similar proportions of boys (21 per cent) and girls (20 per cent) had drunk alcohol in the last week, with the prevalence of drinking alcohol in the last week increasing with age: 3 per cent of all pupils aged 11 had had an alcoholic drink in the last week, compared with 41 per cent of 15-year-olds. Similar, although higher, figures were produced from a different survey of 10–15-year-olds in the UK in 2006, undertaken by the Schools Health Education Unit. They found (SHEU, 2007) that 8 per cent of the 10–11-year-olds and 19 per cent of the 12–13-year-olds (and 37 per cent of the 14–15-year-olds) had consumed at least one alcoholic drink during the previous week.

Age of initiation into drinking is much more of an issue in the USA, where the legal drinking age is 21, than in the UK. Because of this, USA commentators are as worried about 16-year-olds drinking as UK ones are about 12-year-olds; and in 2005, Jernigan (2005) showed that, every day in the United States, more than 7,000 children under 16 start drinking. These figures continue to rise. SAMHSA (2007) reported that the 2006 National Survey on Drug Use and Health (NSDUH) showed that 10.6 per cent of adolescents aged 12 to 17 drank alcohol for the first time in the past *year*, and 7,970 adolescents aged 12 to 17 drank alcohol for the first time on each average *day* during the past year. These numbers are just the new drinkers: overall, including new and current drinkers, in the United States in 2006 more than 8 million adolescents aged 12 to 17 drank alcohol in the past *year*, and on an average *day* during 2006, 630,539 adolescents aged 12 to 17 drank alcohol. CDCP (2006) showed that 34 per cent of ninth-grade students (aged 14–15) reported having consumed alcohol before they were age 13 (in contrast, only 19 per cent of ninth-graders reported having smoked cigarettes, and 11 per cent reported having used marijuana before they were age 13.)

Intoxication

However, it is the *amount* that young people drink once they start which is of particular concern. Jefferson et al (2007) report that data from UK national surveys of drinking behaviour in young people show that, at age 15–16, nearly half of young people are consuming alcohol on a weekly basis and around a quarter report drinking to intoxication regularly. Binge drinking habits continue into young adulthood, with more than a third of 16–24 year olds reporting that they drink over the sensible drinking daily limits. NCSR/NFER (2007) showed that in 2006, the average consumption among all of the 11–15-year-olds who had drunk alcohol in the past seven days was 11.4 units. This average weekly consumption increased from 5.3 units in 1990 to 10.4 units in 2000, and 11.4 in 2006. In the six years between 2000 and 2006, the amounts consumed for boys rose from 11.7 to 12.3 units, and for girls rose from 9.1 to 10.5. Although in 2006, boys were still tending to drink more than girls, this gap is narrowing. As would be expected, average alcohol consumption was higher among older pupils: 15-year-old boys had drunk an average of 13.9 units in the previous seven days, compared with 10.9 units for girls; however the average amounts consumed in the last week for those 11–13 year olds who had started drinking was

still high: 11.9 units for boys, 8.9 units for girls. Again, the rises in this age group over the previous 10–15 years are especially concerning. Alcohol Concern's *Glass Half Empty* report (Alcohol Concern, 2007a) showed 11- to 13-year-old boys drinking 43 per cent more units in 2006 than they did in 2000, and 11- to 13-year-old girls drinking 82 per cent more units. There is also evidence that the consumption of these units is not steady across the week but is mainly done in one or two bouts or 'binges' (SHEU, 2007, showed that almost all of the drinking done occurs on only one day, or on two for the 14–15-year-olds).

The European School Survey Project on Alcohol and other Drugs (ESPAD) has examined drinking amongst representative samples of 15 and 16-year-old teenagers in the UK and other European countries. This study has so far been carried out in 1995, 1999 and 2003, with the first one including 29 countries and the most recent, 35 countries (Hibell et al. 1997, 2000, 2004, 2009). The study enables a comparison to be made between drinking by UK teenagers and those from other European countries. This comparison shows that UK teenagers, together with those from Ireland, the Netherlands, the Isle of Man, Malta, Sweden, Denmark and Norway, are the most likely to engage in 'binge' drinking (defined by ESPAD as drinking five or more drinks in a row). In the 2003 study, the UK ranked equal third out of 35 countries (Hibell et al., 2004); in the 2007 study, UK girls remained ranked third (only girls from the Isle of Man and Denmark were more likely to have binged in the previous 30 days), UK boys' ranking had improved to equal 11th out of 35 countries (boys from Denmark, the Isle of Man, Malta, Latvia, Portugal, Bulgaria, Czech Republic, Slovenia and Croatia were all more likely to have binged). The comparison also shows a rise in the number of girls bingeing. Between 1995 and 2007, the proportion of UK girls who had 'binged' three times or more in the past 30 days rose from 20 per cent (1995) to 27 per cent (1999) and increased again to 29 per cent in 2003, although it returned to 27 per cent in 2007. In contrast, the proportion among boys rose from 24 per cent (1995) to 33 per cent in 1999 and then fell to 26 per cent in 2003, and remained at 26 per cent in 2007 (Plant et al., 2005; Hibell et al., 2009). In the 2007 survey, the phenomenon of teenage girls being more likely than males to have binged was found only in the UK, Norway, Sweden, and Iceland, and in all of the other three countries, rates of binge drinking were much lower (the overall rate for boys and girls

combined for the UK was 54 per cent, for the other three countries it was 38 per cent, 37 per cent and 22 per cent respectively).

Although the legal drinking age in the USA is 21, Foster et al (2003) showed that young people under 21 account for as much as 20 per cent of all the alcohol consumed there. Johnston et al (2007) showed that almost 20 per cent of 8th-graders (13–14-year-olds), and 41 per cent of 10th-graders (15–16-year-olds) have been drunk at least once. CDCP (2006) showed that ninth-grade (aged 14–15) girls now report consuming almost as much alcohol as ninth-grade boys: 36.2 per cent of girls and 36.3 per cent of boys reported drinking in the past month, and 17.3 per cent of girls and 20.7 per cent of boys reported binge drinking. Although gender differences in binge drinking appear to have disappeared, there are racial and ethnic differences in these rates: CDCP (2006) showed that among students in grades 9 to 12, 29.9 per cent of 'non-Hispanic white' students, 25.3 per cent of Hispanic students, and 11.1 per cent of African American students, reported binge drinking.

Learning about alcohol

Given this backdrop of concerning levels of alcohol consumption, a key question is how children develop their knowledge of, and more importantly their attitudes towards, alcohol. There has been a great deal written about how and why children and young people first drink alcohol, how they usually go on to experiment with it, and how for an increasing number they then go on to binge drink. Yet when children take their first drink it is usual for them to already have some (or a great deal) of knowledge about alcohol, what it is, its common effects on people generally, and some predictions as to what its effect is likely to be on them as individual drinkers; and they will also have already formed attitudes as to whether or not they should be drinking alcohol, whether or not they are likely to enjoy its effects or not, and so on. Indeed, knowledge regarding substances is seen as a necessary precursor to attitude and beliefs (Fossey, 1993a), which in turn are seen as predictive of intentions to use substances (Ajzen and Fishbein, 1980), and then to actually use those substances.

This review will examine what is known about how much knowledge children have, what attitudes they have, and how they acquire this knowledge and these attitudes. This information is important, if we believe (as the present author does) that drinking

behaviours and attitudes towards the drinking of alcohol are primarily learnt. If we understand how knowledge and attitudes are formed and the effect that they have on subsequent behaviour, we can intervene more effectively to affect that behaviour.

The review will then go on to look at how these combine to encourage or restrain children from taking a first drink, and how these again relate to why some children go on to drink more, and some again go on to develop problems.

The review then goes on to look at how this knowledge has been used to try to influence children's drinking behaviour, which in turn informs our understanding of how the factors which impact on developing knowledge, attitudes and behaviour actually work. One of the best ways to clarify whether or not our understanding is correct is to implement interventions based on that understanding – if the interventions are successful, this adds weight to our belief that we do understand these processes; if the interventions are not successful, it implies that there is something lacking in our understanding.

The review will conclude by examining the important messages which need to be put across to both young people and society as a whole, via social policy, the media, school culture and environment, and the family; and the steps which the UK needs to take to create a more positive drinking culture. The review ends by summarising what is not known, and the most important questions therefore which remain open to research.

Setting the scene – what do children know, and what attitudes do they hold, about alcohol?

Children know a lot about alcohol and drinking behaviours

It has been known for many years that young children in the UK and elsewhere know a great deal about alcohol, drinking behaviours, and the appropriate social contexts for the use of alcohol.

More than 35 years ago, Jahoda and Cramond (1972) showed in research in Scotland that many young children were familiar with the names of a number of alcoholic drinks. At age 6, about 40 per cent of children were able to identify at least one alcoholic drink by smell alone (this proportion rising to 75 per cent by age 10). By age 8, most children had no difficulty in sorting bottles or drink into those containing alcohol and those which did not.

Jahoda and Cramond (1972) also showed that similar levels of knowledge and understanding existed with respect to behaviours following drinking, with the vast majority of children being able to correctly recognise drunken behaviour on a film sequence, with practically all children claiming to have seen “people like that” in real life too.

A few years later, also in Scotland, Jahoda, Davies and Tagg (1980) showed that a large proportion of very young children (from age 4 upwards) were able to recognise and correctly label individual pictures of bottles containing alcoholic drinks: approximately half the children in the youngest age group (4–5½ years) were able to give an appropriate 'alcoholic' label to these individual pictures of bottles, and this proportion showed no significant increase in the second age group (5½–6½ years).

When the pictures of bottles were then split into an 'alcoholic' and a 'non-alcoholic' set, and children were asked to explain the difference between the two groups, roughly the same proportion (ie about half) were able to correctly differentiate between the groups. (The criterion for correct identification was whether or not the child indicated some relevant distinction [e.g. 'These are for grown-ups'; 'Daddies

drink these'; 'Wee boys and girls can't drink these 'cos big people would go to prison'; 'These are not good for you, they make you drunk']. Incorrect responses were usually in terms of shape, size, or label characteristics [eg 'these are smaller bottles'], or else an answer was simply not forthcoming.)

At these ages (4–6½) there was no significant relationship between these responses: the fact that a child labelled bottles appropriately gave no indication as to whether he or she would also be able to explain the groupings. For the age group 6½–7½ years, there was an increase to about two-thirds of correct responses to both tasks; and the relationship between their correct scores also became significant, indicating that the two tasks had become linked in the structure of children's cognitive processes in this older age group.

These findings were replicated and the ages at which they were found lowered in subsequent research. Jahoda, Davies and Tagg (1980) in the UK and Spiegler (1983) in the USA showed that children as young as 3 have acquired knowledge and attitudes regarding alcohol and cigarettes, and Bloom and Greenwald (1984) reported that all second graders in their USA sample (aged about 6) knew what alcohol was.

Zucker et al, 1995 showed that such identification from photos was apparent in the vast majority of children as young as age 3 (73 per cent of whom were able to identify at least one alcoholic beverage). Similar results have been shown in many countries (eg USA (Andrews et al, 2003, children aged 5–9; Hahn et al, 2000, children aged 5–6); Australia (Cameron et al, 2003, children aged 8–12); New Zealand (Casswell et al, 1988, children aged 8–9) and over a number of years (eg Penrose, 1978; Noll and Zucker, 1983; Spiegler, 1983; Greenberg, Zucker and Noll, 1985; Gaines, Brooks, Maisto, Deitrich and Shagena, 1989). Andrews et al (2003) showed that over 92 per cent of 5-year-old boys and over 82 per cent of 5-year-old girls could recognise alcohol from pictures of bottles of wine, beer and spirits (by naming or describing their effects).

This assessment of knowledge as outlined above is generally measured by verbal means, and hence limits the ages at which one can ask these questions of children. Dalton et al (2005) used another way of learning about very young children’s

knowledge: they had 120 children aged 2–6 (participating individually) use props and dolls to act out a social evening for adults. As part of the role play, each child selected items from a miniature grocery store stocked with 73 different products, including beer, wine, and cigarettes, for an evening with friends. These 120 children purchased a mean of 17 of the 73 products in the store, with thirty-four of them (28.3 per cent) buying cigarettes and 74 (61.7 per cent) buying alcohol. It is unlikely that these purchases were random; instead it is more likely that the purchases implied some level of knowledge about the products. Evidence for this comes from the fact that children were more likely to buy beer or wine if their parents drank alcohol at least monthly or if they viewed PG13- or R-rated movies. (Children were also more likely to buy cigarettes if their parents smoked.) Further, the authors conclude that

> "*children's play behaviour suggests that they are highly attentive to the use and enjoyment of alcohol and tobacco and have well-established expectations about how cigarettes and alcohol fit into social settings*" (p 854).

Jahoda and Cramond (1972) used another innovative way of understanding knowledge in the absence of verbal means, examining children's responses to the smell of alcohol (with again, their ability to differentiate between alcohol and other smells implying that they have knowledge that alcohol is a different commodity to others). Fossey (1993b) showed that young children (in three age ranges: 5.5–6.5, 7.5–8.5 and 9.5–10.5 years) could identify alcohol on the basis of smell. She also found that, when the identification of the odour was aided by pictorial cues, almost 95 per cent of the sample identified at least one of the alcoholic beverages; and that alcoholic beverages were identified significantly more often than non-alcoholic substances.

This knowledge is also apparent at much younger ages. Noll et al. (1990), working with very young children aged from 30–72 months, found that, by the age of 2.5 years, children were able to correctly identify alcohol by smell alone and were as successful in identifying the odour of alcohol as they were other familiar odours such as popcorn and Play-Doh. Mennella and Beauchamp (1998) showed that this knowledge is present at even earlier ages. Six- to 13-month-old infants differentially responded to toys that were identical in appearance but differed in their scent; the toy was either unscented, or scented with ethanol, or with a non-ethanol-based vanilla.

Those infants who had more exposure to ethanol, as inferred from questionnaires about parental alcohol intake, mouthed an ethanol-scented toy more when compared with less exposed infants, and they did not do the same when exposed to either the vanilla-scented or the unscented toy. This knowledge therefore is quite strongly selective, because it allowed for the discrimination of two closely related aromas, vanilla and ethanol.

Knowledge of course is not purely confined to naming substances and understanding some of their effects. It has also been known for some time that preadolescents, and even preschoolers, have some understanding of the contextual, motivational, and normative aspects of alcohol usage (Casswell et al, 1988; Gaines et al, 1989; Zucker and Noll, 1987).

In summary, even babies and extremely young children have knowledge of alcohol: they can detect it, and know that it is different from other substances, and they have a wealth of expectations and understandings about how alcohol is used within society. As would be expected, their knowledge increases with age.

Children have clear attitudes towards alcohol and drinking behaviours

There is no universally agreed definition of what an 'attitude' is, but most agree that it is a blend of beliefs, values and feelings which exerts an influence on a person's response to people, objects, and situations. It is generally agreed that attitudes are made up of three components:

1. **Cognitive Component** – ie an individual's perception of facts, mental models (cause and effect beliefs), and opinions regarding the attitude object. Cognitions are often thought of as the rational and logical component of the attitude.
2. **Affective Component** – represents our feelings and emotions associated with the attitude object.
3. **Evaluative Component** – the summary component of the attitude in that this is where our cognitions and affect combine to form an overall positive or negative orientation towards the attitude object.

Some also have suggested that two other components are part of attitudes: expectations about the object, and intentions to act toward the object; but this review will examine these separately, below.

Many of the studies described in the previous section also examined attitudes, and again found that even very young children had quite clear attitudes towards alcohol, although again these attitudes became more complex with increasing age.

Jahoda and Cramond (1972) showed that children's attitudes towards alcohol were formed early (certainly by age 6). They also showed that they changed over time: asked to judge whether photographs of adults who were drinking alcohol were 'nice' or not, the children's assessments became increasingly unfavourable with rising age.

On the other hand, their attitudes to their own (future) drinking became more favourable as they grew older – at age 6 most children said that they would not drink alcohol when they were older; but by age 10, many were much less sure about this.

Many of these changes relate to the process of socialisation, discussed below. As children develop they are socialised into the expectation that, as adults, probably as young adults, and maybe as younger teenagers, they will start to consume alcohol.

Indeed, this socialisation process means that many attitudes and beliefs are shared by society at large, and Zucker and colleagues (eg Greenberg et al, 1985) found a few years after the groundbreaking Jahoda and Cramond work that even preschool children in the general population already held some of these shared belief schemes about alcohol-use within the larger culture: they attributed alcoholic beverage consumption more to adults than children, and more to adult males than adult females.

Other elements of the socialisation process also come into the equation with increasing age (ie young teenagerhood as opposed to middle primary school age), especially the impact of direct and more subtle marketing, aimed at younger audiences (which is covered in greater detail in a later section). Detailed research by Hughes et al (1997) demonstrated different attitudes towards particular types of alcohol, dependent on age, with designer drinks such as alcopops being favoured by

children aged 13–16, and more conventional drinks being preferred by older adolescents. They suggested that this reflected attitudes towards, and motivations for, drinking, with the brand imagery of designer drinks tending to match 14 and 15-year-olds' perceptions and expectations of drinking, whereas more mainstream or conventional drinks became consistently more popular as age increased. Furthermore, they found that designer drinks tended to be consumed in less controlled circumstances and were associated with heavier alcohol intake and greater drunkenness. These findings were reinforced by others which showed that alcopops had a greater influence with younger children – for example, Sutherland and Willner's (1998) study of 11–16 year olds showed that almost half of the drinkers (47 per cent) preferred alcopops, and that the proportion that did so fell from 63 per cent at age 11 to 38 per cent at age 16.

Similarly, Leeming et al (2002) examined the attitudes to alcohol (including alcopops) of 210 young adolescents between the ages of 11 and 14, by using a word association methodology to explore adolescents' impressions of cigarette smoking, drinking alcohol and taking a range of illegal drugs. The young people were asked to generate images or thoughts when various terms were put to them, such as 'drinking beer, lager or cider; drinking alcopops; smoking cigarettes; smoking cannabis; sniffing glue; taking ecstasy, etc'. In total, 3,571 images were generated by these young people, which were placed into 24 categories on the basis of content analysis. The young people generated predominantly negative imagery, particularly for cigarette smoking and drug taking, and there was little evidence of a simplistic generic attitude to substance use. However, and again underlining the impact of positive marketing on adolescent attitude formation, images of alcohol, especially alcopops, were markedly more positive and were much less likely to contain reference to specific health problems than the images of cigarette smoking.

The work of Harnett et al (2000) provides useful insight into the attitudes that children adopt towards alcohol and how and why these change. Their work on drinking styles (albeit with an older age group, starting at age 16) suggests that attitudes towards drinking change as lives change (whether they work, whether they have a family, the importance of their peer groups, etc). The first two of the 8 drinking styles they postulate are 'Childhood' ones and 'Adolescent' ones. They suggest that there are

'Childhood drinking styles': ways of drinking in which all aspects of the drinking occasion were controlled by adults. These most commonly took the form of 'wine at table' with parents, which involved moderate amounts of alcohol at certain prescribed moments, although another childhood drinking style ('brought up with it' drinking) was a regular and normal practice situated in the context of everyday life rather than just being occasional. These are then replaced by 'Adolescent drinking styles' which describe drinking situations in which an individual's drinking was, for the first time, organised by, and exclusively practised with, members of the peer group rather than in the presence of family or community members.

In summary, young children have already acquired attitudes towards alcohol, often reflecting the dominant socialisation processes, where children are socialised into the expectation that they will start to consume alcohol at some stage. Even preschool children attribute alcoholic beverage consumption to adults, and more to adult males than adult females. This socialisation process is assisted by the impact of direct and more subtle marketing, aimed at younger audiences, especially young teenagers (although of course many much younger children experience and hence are also influenced by this marketing). It is also the case that the attitudes that children adopt towards drinking change as lives change, and as they move from an adult-controlled drinking environment (parents, family events) into a self/peer-controlled environment.

Children have clear expectations of and intentions towards alcohol and drinking behaviours

Expectancies

A topic strongly related to attitudes is expectancies. A number of writers, stretching back to Marlatt and Rohsenow (1980), have argued that attitudes are strongly linked to 'expectancies' – ie that children's expectations of whether they are likely to drink in the future, and of what might happen if they do (whether they will like drinking, whether it will make them more attractive, popular, etc) are a good measure of their underlying attitudes towards alcohol.

Indeed, much research has shown that such expectancies do not only influence attitudes towards alcohol and the likelihood of therefore drinking alcohol, they also

influence the *effects* of that alcohol. A number of placebo studies have demonstrated that merely believing that one had had a drink leads people to behave in ways that they would normally expect to behave when under the influence of alcohol (Fillmore and Vogel-Sprott, 1998; Goldman et al, 1999). Accordingly, a great deal of research over the past three decades has been undertaken into expectancies.

Dalton et al (2005) showed that even very young children had well-established expectations about how alcohol (and cigarettes) fit into social settings. In their playacting of shopping and organising a social evening pretending to be adults, they showed that they expected adults to purchase and use alcohol (and tobacco) in social situations – ie that the use of alcohol and tobacco were both appropriate and normative. It also seemed clear that these expectations were linked to their observations of adult behaviour, especially parental behaviour.

Dunn and Goldman (1998) argue that expectancies are central to the formation and development of attitudes. They showed that older and heavier-drinking children had more positive associations with alcohol cues in contrast to younger, lower drinking children, who associated alcohol with more negative and undesirable effects. Previous work by the same authors (Dunn and Goldman, 1996) had shown that younger children exhibited more negative associations with alcohol related cues; but that the same cues activated more positive and arousing thoughts among older children, which they attributed to changes in cognitive organisation as children grow older.

These and other studies show that children as young as 8 have clear ideas about the appropriateness and the effects of drinking; and that these expectancies tend to become more positive as children get older. Cameron et al (2003), on the other hand, argue that a lot of previous work has been based on an *assumption:* that there is a major transition in expectancies from 'negative' ones (which many young children hold – Jahoda and Cramond, 1972, above) to more 'positive' ones. They argue that the transition is far more than a simple shift from negative to positive, and suggest that as young people grow up, they entertain gradually more complex alcohol-related expectancies, and are increasingly aware of both negative and positive consequences of consumption. They tested these ideas by examining expectancies in 233 primary and middle school children aged 8, 10, and 12 years. Colour photographs of alcohol

and non-alcohol food or beverage items were presented in three conditions: the item only on an outdoor picnic table, the item being consumed at the same outdoor picnic table by one adult male, and the item being consumed at the same outdoor picnic table by a group of people including two men, two women, and two children (although the children were not depicted consuming alcoholic beverages). They found that, consistent with an 'ambivalence model' of alcohol use (Breiner, Stritzke and Lang, 1999), children endorsed both positive and negative alcohol expectancies. There was a main effect for school grade (ie age), with older children endorsing alcohol expectancies more than younger children. Compared to non-alcohol food or beverage items, differences between positive and negative expectancies were much smaller for alcohol items, indicating a more balanced or ambivalent expectancy configuration that was unique to alcohol.

Not surprisingly, many researchers have found that expectancies are influenced by parental example. Wiers, Gunning and Sergeant (1998) looked at the alcohol-related expectancies (and at alcohol use) in 185 'children of alcoholics' (COAs) and controls, aged 7 to 18 years. They were interested in testing two contrasting hypotheses which had been proposed about the expectancies of young COAs: on the one hand, that COAs should hold more negative expectancies than controls due to aversive learning; on the other, to hold more positive expectancies due to either social learning or a more favorable response to alcohol. Wiers et al proposed that younger COAs (elementary school age) would hold more negative expectancies due to aversive learning, whereas older COAs would hold more positive expectancies due to a more favourable response to alcohol. They further suggested that the critical variable with respect to the change from more negative to more positive expectancies would be the child's own initiation of alcohol use. The results of their study (which was cross-sectional and which therefore could not demonstrate the changes that they were looking for) provided suggestive evidence in favour of their hypothesis: elementary school-aged COAs had stronger negative expectancies than controls, as did older COAs who had not yet started drinking; but older COAs who had started drinking showed more positive expectancies.

These findings of the impact of parents on children's attitudes are reinforced by those from a study with much younger children: Mennella and Garcia (2000) also found

that knowledge and attitudes come from experience with parents. Mennella and Beauchamp (1998) had already shown that, during the first year of life, infants who had more exposure to alcohol, as inferred from questionnaires about parental 'alcoholism' and alcohol intake, mouthed an ethanol-scented toy more compared with less exposed infants. This 2000 study focused on older children (3.8–6.0 years) to further determine whether this response to the odour of alcohol (in this case, beer) was related to the drinking habits of their parents. They found that the children's preference for the odour of beer varied as a function of the 'escape drinking' of their mothers alone or both parents. That is, children who lived in a household in which one or both parents drank alcohol to escape were significantly more likely to *dislike* the odour bottle that contained alcohol when compared with children whose parents did not drink to escape. This difference between the groups was odour-specific. Additional analyses also revealed that the fathers of children who rejected the beer odour reported drinking significantly more than the fathers of those who liked the odour. They concluded that some early learning about alcohol is based on sensory experiences, related to children's experiences at home and the emotional context in which their parents use alcohol.

Intentions

It both seems logical to assume, and has been borne out by both research (eg O'Callaghan, Chant, Callan, and Baglioni, 1997) and theory (drawing on the theory of reasoned action (Ajzen and Fishbein, 1980) and the theory of planned behaviour (Ajzen, 1988, 1991)), that one's future intentions to use a substance are related to one's attitudes and expectancies, and also to one's subsequent behaviour later in life.

As shown above, Jahoda and Cramond's (1972) research was ground-breaking here too. They showed that although children's attitudes towards alcohol changed over time, with older children seeing adults who were drinking alcohol as being less 'nice' than younger ones, their intentions about their own future drinking became more favourable as they grew older: at age 6 most children said that they would not drink alcohol when they were older; but by age 10, many were much less sure about this.

Andrews et al (2003) looked in more detail at the issue of both behavioural intention (and later actual behaviour, see a later section). They surveyed 1,075 5–9 year olds

(and also followed them up for three years, to examine the relationship between intentions and future behaviour). They found that there were both age and sex differences in their stated intentions to drink, again (as with Jahoda and Cramond) showing that intentions to drink increased with age, but also showing that boys were more likely than girls to intend to drink alcohol (and to use tobacco) when older (intentions to drink ranged for boys from 33 per cent at age 5 to 52 per cent at age 10; for girls, from 22 per cent at age 5 to 57 per cent at age 11). Cameron et al (2003), in their study of expectations about alcohol, found similar results: over 30 per cent (31.1 per cent) of the 8-year-olds thought that they would drink alcohol 'when they got older', almost 50 per cent (47.6 per cent) of the 10-year-olds thought this, and almost 60 per cent of the 12-year-olds thought this (57.5 per cent).

A further interesting idea was introduced by Spijkerman et al (2004) who examined the concept of social image factors, and of a 'prototype', in intentions. Previous research had demonstrated that social image factors play an important role in the course of adolescent's smoking and drinking. These authors introduced the concept of *social images* or *prototypes*. They suggested that intention and expectations would also be influenced by how much the children liked the overall 'idea' of being a drinker or smoker. They studied the relationship between prototypes, and adolescents' willingness and intention to engage in smoking and drinking behaviour, using cross-sectional data from 2,814 adolescents (12–16 years). Results showed that adolescents describe daily-smoking and weekly-drinking peers generally as slightly well adjusted, slightly rebellious, not really cool, and not really attractive. They also found that positive relations were observed between smoker and drinker prototypes and adolescents' intention and willingness to smoke and drink in the future. Furthermore, regression analyses showed that prototypes of daily-smoking and weekly-drinking peers explained a significant part of the variance in intention and willingness to smoke and drink. A further study by the same group (Spijkerman et al, 2007) looked at the issue of drinker prototypes mediating relations between peer and parental drinking behaviours and norms, and subsequent adolescent alcohol use. In this study they took into account the reciprocal relationship between drinker prototypes and alcohol consumption, and studied these issues in adolescents with and without drinking experience, using longitudinal data from 1,956 Dutch adolescents (12–16 years). They found significant effects of drinker prototypes on future alcohol use

among both abstaining and drinking adolescents. Among drinking adolescents, the impact of peer and parental norms on adolescents' alcohol use was mediated by drinker prototypes. Among adolescents with no drinking experience, drinker prototypes also affected future alcohol use, although these effects were less important than the direct impact of peer and parental drinking. They concluded that prototypes mediate the influence of peer and parental norms on adolescents' alcohol use, especially in adolescents who already have drinking experience.

A similar idea of prototypes has been used in the smoking field too. Freeman et al, (2005) explored young children's attitudes toward, beliefs about, and life-style associations with cigarette smoking, with almost 250 children aged 7–8 and 10–11, who were all individually interviewed. The children selected pictures in response to the questions: who would like to smoke cigarettes the most and who would like to smoke cigarettes the least?, with their picture choices being probed using open-ended prompts designed to elicit the beliefs and life-style associations underlying their choices. Survey-based measures of attitudes and beliefs were also collected. They found that the younger children had associations with smoking which were generally negative, although these children also thought that others feel that smoking makes them look cool and feel cool, and also helps them to fit in. By age 10–11, many children believed that smoking could help to reduce stress and alleviate negative mood states. The presence of a smoker in the household did not appear to affect these associations, suggesting that they may be being shaped by external socialisation agents.

On the other hand, some research (eg Keefe, 1994) does suggest that it is attitudes and subjective norms which are associated directly with alcohol consumption, implying that intentions are not needed to explain behaviour.

In summary, many have argued that children's expectations of whether they are likely to drink in the future, and of what might happen if they do (whether they will like drinking, whether it will make them more attractive, popular, etc) are a good measure of their underlying attitudes towards alcohol. It has also been shown that such expectancies do not only influence attitudes towards alcohol and the likelihood of therefore drinking alcohol, they also influence the *effects* of that alcohol, with

people behaving after drinking primarily in ways which they expect to behave when under the influence of alcohol. Much research has shown that even very young children have well-established expectations about how alcohol fit into social settings, including shopping and social events, as appropriate and normative behaviour. Expectancies about alcohol become both more positive as children grow older, and as they start to drink, and more complex, being increasingly aware of both negative and positive consequences of consumption. Many of these expectations, and of the changes in them, are linked to observations of adult behaviour, as well as to their own drinking behaviour once they start. The changes in expectancies are mirrored by changes in intentions: they become more favourable as they grow older. A further variable influencing both expectations and intentions is the overall social image related to 'a drinker', with both intentions and expectations being influenced by how much the children like the overall 'idea' or 'prototype' of being a drinker.

Expectancies, intentions, and drinking behaviours

The above sections have implied that there is a relationship between expectancies, intentions, and later drinking; and there is evidence that this relationship does actually exist: in fact, it has been known about for some time. Christiansen, Roehling, Smith and Goldman (1989) showed how it was possible to use alcohol expectancies to predict adolescent drinking one year later. Their sample consisted of 637 children whose expectancies (and drinking behaviour) were assessed during their 7th or 8th grade (ie aged 12–14), and then again one year later. In the first year, some 52 per cent reported that they had drunk more than 4 drinks in their lifetime, and 10 per cent reported that they got drunk 2–4 times a year or more. One year later these percentages had risen to 68 per cent and 25 per cent respectively. Importantly, there were strong longitudinal predictions between expectancy scores at Year 1 and both quantity/frequency and a measure of 'problem drinking', in Year 2. Hence expectancy at Year 1 correlated at about 0.5 with these measures at year 2 (ie the strength of expectancies held at Year 1 predicted approximately one quarter of the variance in drinking behaviour at Year 2). As the authors say, "*It is noteworthy that the longitudinal predictive power of expectancy in this sample compares favorably with concurrent prediction results reported in earlier studies*" (page 97).

Padget et al (2006) summarise the relationship between age, expectancies, intentions and behaviour. They argue that children's attitudes towards alcohol use are typically negative when the children are aged about 6–8, and become less so with age. They suggest that children of this age, and older but non-drinking students, both tend to associate alcohol use with negative, unpleasant effects, while older children (aged 9 to 13), and especially those who have begun to drink alcohol at these ages, tend to associate alcohol use with positive, arousing effects. They argue that intentions to use alcohol also increase with age and constitute an early warning sign for subsequence initiation of use.

Zucker and colleagues (Donovan et al, 2004) showed that alcohol expectancies measured at a very much earlier age also predicted adolescent drinking. They report the results of a study of 400 intact families, each at baseline with a 3- to 5-year-old son, where their outcome variable was the age of onset of regular drinking of that child. Early child expectancies about adult alcohol use were measured in the same way as previously reported (eg Zucker et al, 1995, p 22 above) with drawings of child and adult figures in common social situations (eg two adults on a sofa in front of a fireplace, a family eating dinner, a man watching TV) where the child was asked what kind of beverage the figures were drinking (alcohol versus non-alcohol). Alcohol expectancies were indicated by the proportion of the beverages assigned to the male adult figure that were alcoholic rather than non-alcoholic drinks. The strength of these child alcohol use schemas correlated significantly with parental alcohol consumption (averaged across father and mother) and with parental 'alcoholism', both assessed by parental report when the children were in early childhood. As Zucker and colleagues had hypothesised, these alcohol use schemas assessed at ages 3–5 significantly predicted early onset of drinking some 9 years later (as did both parental alcohol use and parental alcoholism, although importantly, child alcohol schemas predicted early drinking onset even when the effects of parental alcoholism were statistically removed). These findings indicate that early child alcohol expectancies are precursors of later alcohol use; they counter the view that early drinking experiences are shaped solely by peer influences and modelling occurring in middle childhood and adolescence. The findings indicate that very early cognitions/expectancies about alcohol, acquired at least in part through early learning in the home, are part of a

causal pathway that may lead through early-onset drinking to problem alcohol use at a later life stage.

There is also a relationship between beliefs about the safety/harmfulness of an activity, and both intentions and later behaviour. In the smoking field, Krosnick et al (2006) showed that perceiving smoking to entail greater health risks reduced the likelihood that a young person would then go on to begin to smoke. The authors suggest that public health campaigns should continue to focus on this theme, in order to bolster resistance to smoking onset among young people. Similarly in the alcohol field, Martino et al (2006) showed that children's beliefs about the probable consequences of alcohol use played a causal role in the initiation and development of adolescent drinking. Those who believed that alcohol had more negative consequences were less likely than others to drink. Adolescents who held favourable attitudes towards alcohol were more likely to consume alcohol.

Oei and Morawska (2004) developed a cognitive model of binge drinking which linked together the influence of alcohol expectancies and drinking refusal self-efficacy[1]. These authors suggested that research into binge drinking needs to be theoretically driven, but that there is a lack of good psychological theory on which to base this research. They developed a cognitive model using the key constructs of alcohol expectancies and drinking refusal self-efficacy to explain the acquisition and maintenance of binge drinking. They suggested that the four combinations of alcohol expectancies (positive vs negative) and drinking refusal self-efficacy (high vs low) can explain four drinking styles which they identify: normal/social drinkers (positive expectancies, high refusal self-efficacy), binge drinkers (negative expectancies, high refusal self-efficacy), regular heavy drinkers (positive expectancies, low refusal self-efficacy), and problem drinkers or 'alcoholics' (negative expectancies, low refusal self-efficacy). They further argue that, since both alcohol expectancies and drinking refusal self-efficacy are cognitive constructs, they are therefore modifiable: this means that this cognitive model could facilitate the design of intervention and prevention strategies for binge drinking.

[1] Self-efficacy is a person's belief in his or her ability to succeed in a particular situation.

Norman and Conner (2006) also attempted to bring a more theoretical slant to this area, by considering the utility of the Theory of Planned Behaviour (TPB: Ajzen, 1988, 1991) as a framework for predicting binge drinking among young people. According to the TPB, the proximal (or most central) determinant of behaviour is the individual's intention to engage in the behaviour. Intention is, in turn, determined by three constructs. First, is the individual's attitude towards the behaviour, which reflects an overall positive or negative evaluation of the behaviour. Second is the individual's perception of the social pressure from important others to perform or not perform the behaviour (ie subjective norm). Third is the individual's perception of the ease or difficulty of performing the behaviour (ie perceived behavioural control), which is seen to cover the influence of both internal (eg skills) and external (eg constraints) control factors. They used a sample of 398 undergraduate students who completed questionnaires assessing the main constructs of the theory of planned behaviour (TPB) in relation to binge drinking, as well as past binge drinking behaviour. Of these, 273 were followed up at one week. Regression analyses revealed positive attitudes towards binge drinking, high self-efficacy over their ability to engage in binge drinking, and low levels of perceived control over whether or not they could engage in binge drinking to be predictive of binge drinking intentions. Intention and self-efficacy were, in turn, predictive of binge drinking at 1-week follow-up. Past behaviour was found to explain additional variance in intention and behaviour. In addition, past behaviour was found to moderate the attitude–intention and intention–behaviour relationships, such that weaker relationships were observed with increasing frequency of past behaviour. The authors suggest that their findings have a number of important implications for theory-based interventions to promote more appropriate drinking behaviour. Attitude was the strongest predictor of binge drinking intentions, which were, in turn, predictive of binge drinking behaviour. Interventions may therefore target attitudes towards binge drinking by focusing on the negative consequences of binge drinking and by challenging the positive consequences associated with binge drinking. Given that the attitude–intention and intention–behaviour relationships were weaker under high levels of past behaviour, it may be important to inculcate such beliefs before drinking patterns become well established. They suggest that interventions should attempt to alter the social environment in order reduce the influence of external pressures to engage in binge drinking. This may be achieved directly by changing drinking environments such as

pubs to encourage activities other than the simple consumption of alcohol (such as eating) or by reducing the promotion of cheap drinks such as 'happy hours'. Alternatively, wider social attitudes towards binge drinking could be changed through the promotion of appropriate models of alcohol consumption in the media.

Conner et al (2006) also used the TPB in two studies to examine the relationship between 'anticipated regret' (ie the extent to which adolescents stated that they would regret, be worried, be sad, be ashamed, and be sorry, if they smoked a cigarette), intentions to initiate smoking, the stability of intentions over time, and the subsequent initiation of smoking. In the first study, 347 non-smoking adolescents (aged 11–12) completed measures relating to TPB, intentions and anticipated regret. Conner et al found that regret significantly added to predictions of intentions over and above the usual components of the TPB. In the second study, 675 non-smoking adolescents (aged 11–12) completed the TPB, anticipated regret, and intention stability measures in relation to smoking initiation, and then were followed up 9 months later where smoking was assessed objectively by carbon monoxide breath monitoring. They found that smoking behaviour was predicted by intentions, and that the relationship of intentions to behaviour was moderated by both regret and intention stability.

In summary then, considerable research on alcohol expectancies (beliefs about the effects of alcohol) has found that young people develop alcohol expectancies before ever having direct experience with alcohol, and these beliefs/cognitions about how alcohol will actually affect them are strong predictors of both intentions to later use alcohol and actual future alcohol consumption.

In summary: Knowledge, attitudes and behaviour

Evidence is accumulating suggesting that most pre-school children, and even very young children and babies, can identify alcoholic beverages and have already developed certain cognitive concepts and schemas (ie integrated beliefs) about drinking behaviours. In smell identification tasks, the majority of preschool children can successfully identify alcoholic beverages, and those children who had parents who were heavier drinkers showed a higher rate of identification. Such children are also more likely to correctly identify a larger number of alcohol beverages (eg beer,

wine), and to attribute heavier alcohol use to adult men, rather than women. It appears that the early formation of knowledge about and concepts of alcohol use emerge very early, certainly within the preschool years, and that parental drinking practices are associated with these early formative beliefs.

The acquisition and elaboration of knowledge about alcohol use by children continues through their primary school years. They gradually acquire knowledge about where people typically drink and that some drinks contain more alcohol than others, over these primary school years. As knowledge grows, so too does their intention to drink alcohol: as they grow older, so the percentage of children who indicate that they intended to use alcohol in the future grows. Again, children's intention to drink is also significantly related to parental drinking practices, with the more the parents drink, the more likely that children will express an intention to drink.

There are also significant age differences in the development of alcohol expectancies. Alcohol expectancies are related to levels of alcohol consumption so it is important to understand their early origins and development. Alcohol expectancies become increasingly positive as children grow older, and by age 10, most children tend to believe that the use of alcohol results in positive outcomes (such as higher levels of acceptance and liking by peers and being in a good mood with positive feelings about oneself).

In the main during primary school years, although there are these changes in knowledge, attitudes and intentions, most children do not commence drinking, although they may well have sips of parents' alcoholic beverages. Changes in attitudes and intentions continue, as well as larger changes in behaviour, once secondary school is reached. Some of these changes in behaviour have been reported above, in the introduction.

How do children acquire this knowledge and these attitudes?

Before we can even start to examine this question, it is important to set the review in a context of examining how children learn about anything. It is possible to look at alcohol in isolation but in reality, it would be unusual if the processes which underlie children's developing understanding (knowledge, attitudes, and then subsequent behaviour) about alcohol were vastly different to the processes which underpin their acquisition of any knowledge.

How do children acquire knowledge and attitudes about any social behaviour? The process of socialisation

It is important not to make alcohol into an entirely 'special case'. There may well be elements about alcohol which make it special, but as stated above, the question (of how children learn about and develop attitudes towards alcohol) needs to be seen in the context of how children do these things about anything. Hence the starting point must be:

- What is known from developmental psychology about how children acquire knowledge (about anything)?
- What is known from developmental psychology about how children both acquire attitudes (to anything) and about how these attitudes change, and what therefore is generalisable from this to allow us to develop our understanding of attitudes towards alcohol as a specific case?

The answers seem to be that there are multiple influences. This is again not a new finding – in the early 1950s Kurt Lewin (1951) suggested in his influential Field Theory that all behaviour was a function of the interaction between the person and their environment, and hence a wider range of factors related to the individual, his or her family and wider networks, his or her environment, and his or her culture, will all impact on the development of knowledge and attitudes, and the resulting behaviours.

Babies learn about things even before birth (there is for example evidence that musical preference can be influenced by what the mother listens to: Ilari, 2003; Jones, 2001; Parncutt, 2006).

From birth onwards, they learn at a very rapid rate,

- partly via visual and auditory observation (of both family and others, and more general observations such as observing TV, observing people in the street, etc – this process is known as *socialisation*, outlined below) from which they gradually develop schema to enable them to organise these observations (Derry, 1996);
- partly via experience – touching things, tasting things, etc;
- partly via direct education – initially family and then later others specifically instructing, possibly as a response to questions once language starts to develop, and often as a result of formal educative experiences.

Bandura (1969, 1977) has provided a theoretical structure within which these ideas can be framed – now known as Social Learning Theory, one of the most influential theories in behavioural science. Social Learning Theory suggests that observational learning, and the resulting imitation, are central processes within *socialisation*; and that socialisation is a fundamental process where children learn what behaviours are expected by society. Of course, what constitutes socially acceptable behaviour varies across cultures and within social groups within cultures, but socialisation occurs within a culture, and within a social group (although conflicts can and do arise when the socialisation emanating from within a social group differs from the socialisation emanating from the overall culture. The main point is that all humans (and especially children and young people) are, throughout their lives, constantly being exposed to behaviours which are labelled for them as more or less socially acceptable or socially unacceptable.

Initially children learn via observation and modelling of these behaviours, and subsequent reinforcement from parents and close family; once in school, other influences (peers, teachers, etc) also become increasingly important; and throughout, both before and during school, media representations impact on what is learnt, directly via TV, radio, videos, DVDs, reading materials, etc, and indirectly via advertising, product placements, sponsorships, and many other forms of indirect marketing.

Following this continuous socialisation process in infancy and early education, during the development phases of puberty (Petersen, 1993), a series of interlocking major shifts in cognitions and reasoning occur, especially the ability to think in terms of abstractions (such as democracy and liberty), and the growth of 'adolescent egocentrism' (Elkind, 1967), and in attitudes and intentions. Hormonal changes (Buchanan, Eccles and Becker, 1992) coupled with societal expectations (delivered via intense media representations, and both adult and peer expectations) combine to increase adolescents' interest in romantic and sexual relationships, and similar societal expectations also lead young people to expect that their peer group will take a more prominent role in their lives than in the past, and parents will take a lesser role. There is also a well documented common 'delusion' which most young people have, of being invincible and invulnerable (Greene, Rubin, Walters and Hale, 1996; Kaplan, 1993). There is evidence that the influence of socialisation now far exceeds that of physiological and hormonal changes. For example, the growth in interest in romantic and sexual relationships, and in sexualised behaviour, now occurs much earlier, due, it is thought, to the influence of the media and the resulting sexualisation of childhood (Levin, 2005; APA, 2007).

Hence developmental psychology suggests that babies, children and adolescents (and indeed, adults as well) learn via a number of direct and indirect mechanisms such as parental modelling, peer modelling, and media representations, as well as via more formal educative experiences, all influenced by biological states.

There is no evidence, nor any reason, to suggest that these fundamental processes differ depending on a person's social, ethnic, economic, religious or cultural background[2]. Obviously the balance between the influences of these various mechanisms (stemming from parents, peers, media, and the wider aspects of socialisation) may differ due to these 'background factors', and the extent that they are will be examined below; but the fundamental processes are the same.

[2] Although as Taylor et al, 2006 point out, none of the theories of health behaviour which they examined in their systematic review – and they looked at the Health Belief Model, the Theory of Reasoned Action, the Theory of Planned Behaviour and the Trans-Theoretical (or Stages of Change) Model – incorporated the significance of social, economic and/or environmental factors as predictors or as determinants of health behaviour.

That being the case,

Is there anything different (and if so what) when answering the question: 'How do children acquire knowledge and attitudes about alcohol and drinking behaviours'?

Knowledge

The basic answer is 'no' – there is nothing that is particularly different about how children acquire knowledge about alcohol! They do so in the same ways that children acquire knowledge about anything else.

On what is this statement based?

What the range of studies reviewed in the previous sections which examined what children know about alcohol do *not* tell us is *how* children come to learn about these things. Most of these studies have relied on visual stimuli (brief films, photographs, or actual bottles). These mean that the children could have learnt what they know about alcohol and its social uses via personal observation (observing parents or other adult (or child) figures using alcohol) but they could also have learnt this from observing media representations on film and television.

Of course, one way to discover how children have acquired their knowledge and attitudes is to ask them, and that is exactly what Casswell et al (1988) did. In an interview study, 750 New Zealand children aged 8 and 9 years revealed clear concepts, mostly negative, about alcohol. Most of the children associated drinking alcohol with getting drunk, and most were very able to describe various effects of alcohol and what 'being drunk' meant. When asked how they knew (ie 'how do you know that this is an effect of alcohol'), television was cited as a source of information for 37 per cent of the sample and parents or siblings for 26 per cent. 21 per cent reported that they had witnessed the effects they described.

However, clearly both knowledge and attitudes can be acquired in many ways and children's perceptions of how they have acquired them are not necessarily correct;

and directly asking them about these is not necessarily the best method of discovering them.

Another one of the key techniques which has been used (already outlined above) is the examination of children's (and babies) ability to discriminate alcohol from other substances on the basis of smell, which necessitates live experience. The fact that so many babies and very young children were able to identify alcohol by smell (alone or with some later assistance from pictorial cues) implies that they must have had direct experience with alcohol: this could not have come from media representations alone.

The conclusion then has to be that children's knowledge about alcohol stems from the same sources as does their knowledge about other commodities and related behaviours: a mixture of observation, experience, media, and education.

Attitudes

Again, the basic answer to the question 'is there anything different about alcohol' is 'no'! Attitudes to alcohol are formed in the same ways as other attitudes are formed, via multiple influences from parents, family, peers, the media, and the wider socialisation process: there is nothing that is particularly different about how children acquire attitudes about alcohol!

Hence numerous writers and researchers stretching back to the early 1980s and even earlier (Andrews et al, 1997; Breed and DeFoe, 1981a,b; Cafiso et al, 1982; Christiansen et al, 1989; Dielman et al, 1993; Dishion and Loeber, 1985, Dishion et al, 1988; Duncan et al, 1994; Finn and Strickland, 1982; Gerbner et al, 1981; Green et al, 1991; Greenberg, 1981; Hops et al, 1996; McEwen and Hanneman, 1974; Noll et al, 1990; Petraitis et al, 1995; Rychtarik et al, 1983; Spiegler, 1983; Strickland et al, 1982) have concluded that, although some young children have occasional, direct experience with alcohol consumption, indirect experiences such as parental modelling, peer modelling, and media dissemination of cultural values probably constitute children's primary sources of learning, and developing attitudes, about alcohol.

Once again, the work by Harnett et al (2000, pp 8–20) on drinking styles provides a useful insight into the attitudes that children adopt towards alcohol and how and why these change, as lives change, dependent on whether they work, whether they have a family, the importance of their peer groups, etc. Similarly, detailed research by Hughes et al (1997) demonstrates how different attitudes are expressed towards particular types of alcohol, dependent on age, with designer drinks favoured by early adolescents aged 13–16, and more conventional drinks preferred by older adolescents.

Many authors have drawn attention to the influence that parents have on the formation of attitudes, both directly and via the behavioural examples that they set. Interestingly, early studies (Jahoda et al, 1980 in Scotland; Penrose, 1978 in the USA) found no evidence that parental drinking (as revealed by parents' self-reports) was related to either knowledge or attitudes found in children aged between four and seven. However, later studies, which examined more obviously problematic drinking parents, found different results.

Zucker et al (1995), in the study cited above under the section on the acquisition of knowledge, demonstrated (as others have done, described above) that children hold both knowledge and beliefs about the use of alcohol and adult drinking by the age of 3. This study showed that 73 per cent of 3-year-olds correctly identified at least one alcoholic beverage from photographs, rising rapidly to 88.5 per cent at age 4 and 97.7 per cent at age 6. Similarly, even 3-year-olds were able to appropriately link 'drinking alcohol' or 'drinking non-alcohol' with situations such as two adults at a party, versus two children on a picnic; and again their ability to do this correctly also rose with age. However, Zucker et al *also* showed that what children know and what they believe about the adult use of alcohol is affected by parental patterns of alcohol use. They compared 139 male children of 'alcoholics' with 82 children of 'non-alcoholics', and found that, with age controlled, children of 'alcoholics' were better able to identify specific alcoholic beverages and correctly identified a larger number of alcoholic beverages; and there was a trend for these children of 'alcoholic' men to attribute more alcoholic beverage use to male adults than did children of 'non-alcoholics'; and that differences in these children's attributions of alcoholic consummatory behaviour were predicted by their parents' current consumption levels. As described above, Zucker and colleagues (Donovan et al, 2004) also showed similar

results from a 9-year longitudinal study. Zucker et al (1995) suggest that these results provide evidence that alcohol schemas (cognitive schemas which provide the structure within which children organise their knowledge and beliefs about the use of alcohol) are detectable in early childhood and are more common in children from alcoholic homes. As discussed above, Mennella and Garcia (2000) similarly found that knowledge and attitudes about alcohol come from experience with parents.

As shown above, there is an influence of parents' behaviour on the development of both attitudes and expectancies, and then later behaviour. Brody et al (2000) provided further evidence of this, by looking at children's internalisation of their parents' alcohol-use norms and their own subsequent alcohol-use behaviour. Their sample included 132 families with a child who was 10–12 years old at the first assessment, and data were obtained in three waves at 1-year intervals. Parents' alcohol-use norms were assessed at Time 1, children's alcohol-use norms at Time 2, and children's drinking behaviour at Time 3. Brody et al report that the link between parents' alcohol-use norms and children's drinking behaviour was mediated through the children's own norms, which they acquired from their parents. They further showed that father–child relationship processes moderated the links between fathers' and children's norms, and between children's norms and subsequent alcohol use.

At a later age, the effect of puberty and adolescent development outlined above are also seen in changes towards attitudes to alcohol. Because these changes combine to increase adolescents' interest in romantic and sexual relationships, alcohol at this stage is seen as being extremely helpful for a variety of reasons, including 'Dutch courage,' as an excuse for risky behaviour, and to enhancing the sex act (IAG, 2007, p 13). The desire to become older, and be seen as older, means that many young people imitate many adult behaviours, such as drinking, smoking and sexual behaviour, all of which are strongly linked. When Engels and Knibbe (2000) tested out whether alcohol was used to augment relationships, they found that it was: young people said that a main reason for drinking was to assist them in starting relationships. They found that teenagers who consumed alcohol at the ages of 14 and 15 were more likely to be involved in an intimate relationship at the age of 17, and that drinking in social settings was a significant factor in increasing the likelihood of having a partner 3 years later. The most relevant aspect of this study is that it shows that bars, pubs and

clubs are seen by adolescents as a place to form new relationships (as well as drink alcohol), and as such this obviously also influences their experience of the consumption of alcohol.

In summary, the above sections have demonstrated that children learn about (and develop attitudes towards) alcohol and drinking behaviour from a number of distinct sources. There are three key questions which arise from this conclusion.

- First, what is known about the impact of each of these different influences (parents and other family members, peers, media and alcohol marketing) on young people's attitudes towards drinking and on their drinking behaviour;
- Second, what is the relative weight of these different influences on these attitudes and behaviour towards drinking;
- and third, what impact do other variables such as socio-economic status, culture, ethnicity, religion, etc have on these attitudes and behaviours.

What is known about the impact of various different influences (parents, peers, media and alcohol marketing) on young people's attitudes towards drinking and on their drinking behaviour?

Role of parents and the family

Parental and family factors which influence the initiation or prevention of substance use behaviours have recently been reviewed by Velleman et al (2005). They conclude that there are seven areas in which the family context influences the child's substance use behaviour: family relations versus structure, family cohesion, family management, family communication, parental modelling of behaviour, parental supervision and parent/peer influences (the issue of the relative weight of parents influence versus peer influence will be considered later in this present review). These areas will also be used below, with the addition of two further ones, parental attachment, and the influence of siblings. The review below focuses primarily on alcohol, but a range of substance use behaviours are included, as there are strong commonalities in the processes described.

Family Relations vs Structure: Relational aspects (eg cohesion, discipline, communication) of families seem to have a much greater influence than structural aspects (eg single parent families, family size, birth order) on forming substance misuse-related behaviours (Piercy *et al*, 1991; Coombs and Paulson, 1988; McArdle et al, 2002).

However, there are some findings that structural issues can also influence this behaviour. For example, there appears to be an increased smoking prevalence in children from one-parent families (Smith et al, 1995), an increased early initiation into drinking or intoxication in one-parent families (Hellandsjo Bu et al, 2002; Duncan et al, 2006), a greater likelihood of being a heavy substance user in children from non-intact families (Ledoux et al, 2002), a greater likelihood of children in single-parent families, step-families, and in care or foster-care, being offered and using drugs (although little difference by gender or socio-economic status was noted, Roker and Coleman, 1995), and a child's permanent separation from at least one biological parent is the strongest socio-demographic predictor of 15-year-olds drinking (Seljamo

et al, 2006, in Finland). There is also some evidence that structural issues can also act protectively: Oman et al (2004) reported that youths from 2-parent households were significantly more likely than those from 1-parent households to report non-use of alcohol, and McArdle et al (2002) reported that living with both parents was associated with reduced levels of drug use in four of the five European cities in which their study took place (Newcastle upon Tyne, Rome, Bremen and Groningen) but not in Dublin. They also showed that living with both parents was not associated with reduced levels of regular drinking by these 14–15 year olds in any of the cities.

It is also likely that it is not these structural factors per se which cause these problems, but that these factors serve to reduce the exposure to or the influence of some of the other, more relational, aspects. So, for example, Hellandsjo Bu et al (2002) showed that those children who drank at a younger age who were from single parent families, also experienced less family support. Similarly, Eitle (2005) showed that teenagers living in 2-parent families have the lowest perceived levels of community disorganisation, have the lowest levels of family mobility, have the highest levels of parental supervision, the lowest levels of poor grades (school failure) and low school commitment, and the lowest mean levels of parental and peer substance use.

Family Cohesion: The closeness of the parent-child bond has been found to discourage substance use both directly and through its impact on choice of non-substance-using friends (Kandel and Andrews, 1987). It also appears to have a bearing on whether experimental drug-use leads to a more serious pattern of drug involvement (Kandel, 1982). Liking and wanting to be like their parents, and a high level of family co-operation, have been seen to be very important factors in the family climate variable (Kumpfer and Turner, 1991). Bahr et al. (1995) from a random sample of 27,000 students in Utah, USA, found that family bonding has a small but significant direct effect, and a moderate indirect effect, on the frequency and amount of alcohol taken, and Anderson and Henry (1994) showed that family bonding serves as a buffer against adolescents' substance use. Bray et al (2001), undertook a 3-year longitudinal study examining the impact of individuation, family conflict and cohesion, and ethnicity on adolescent alcohol use in an ethnically diverse sample of 6,522 White, Mexican American, and African American adolescents over the 6th, 7th, and 8th grades (aged 11–14). They found that 'separation' (emotional detachment

from the family) and family conflict were related to *increases* in alcohol use, and intergenerational individuation (development of autonomy while maintaining intimacy and connection to the family) and family cohesion were related to decreases in alcohol use. White and Mexican American adolescents had a faster rate of increase in alcohol use than did African American youth.

Other evidence indicates that higher levels of family cohesion appear to suppress initial levels of use of alcohol, cigarettes, and marijuana, and can delay increase in cigarette use (Duncan et al, 1995); and that experiencing lower levels of family support is associated with a younger commencement of alcohol use and of intoxication (Hellandsjo Bu et al, 2002). Ledoux et al (2002) found that 15–16-year-olds from both France and the UK who were not satisfied with their relationships with their father or mother were more likely to be heavy substance users than other students. In addition, family bonding has a relatively strong positive association with educational commitment, and adolescents with a higher educational commitment tend to drink less often and use smaller amounts (Bahr et al, 1995).

In a six-year prospective study, Doherty and Allen (1994) found a direct relationship between family functioning, parental smoking and adolescent cigarette use. The interpretation offered was that low family cohesion predisposes adolescents towards deviant behaviour, especially that which is modelled in the home, and that parents in low cohesive families do not have enough influence to control their children.

Recent survey reports from the USA have again reinforced these findings. CASA (2004, 2005, 2006a, 2007) in a series of studies looking at family dinners (the frequency with which children eat dinner with their families) show consistently over time that the greater the frequency of this occurring, the less likely the children (aged 12–17) are to smoke, drink alcohol, use illegal drugs, or misuse prescription drugs, or to have done any of those things in the past. Although of course more children have done each of these at each successive age, this relationship holds true for all ages: those who have frequent family dinners are less likely at every age to do any of these things than are their peers who have less frequent family dinners (high frequency is defined by them as 5+ family dinners per week; low frequency is defined as 2 or fewer family dinners per week). Similarly, young people who have infrequent family

dinners are twice as likely to report that half or more of their friends currently drink beer or other alcoholic beverages, compared to teens who have frequent family dinners. In the same vein, young people who have dinner with their families less than three times a week are three times likelier to say half or more of their friends currently use marijuana, compared to teens who have dinner with their families at least five times a week. The introduction to the Report by the President of the organisation which produced this series of reports, the National Center on Addiction and Substance Abuse at Columbia University, Professor Joseph A. Califano, concludes that: "*preventing America's drug problems is not going to be accomplished in court rooms, legislative hearing rooms or classrooms, by judges, politicians or teachers. It will happen in living rooms and dining rooms and across kitchen tables – by the efforts of parents and families*" (CASA 2007, p iii).

Parental Attachment: Several studies have shown a relationship between an insecure attachment and an enhanced likelihood of both internalising problems in adolescence such as depression, emotional disturbance, anxiety, and suicidal behaviour as well as externalising problems such as delinquency, hostility, and marijuana and other drug use. McNally et al (2003) suggested that insecurely attached people use alcohol as a method to cope with negative emotions, which in turn could subsequently lead to harmful drinking. Insecure attachment could also predispose adolescents to spend more time with deviant peers who drink; these friendships could place them at risk to start drinking at an early age. Indeed, some early work did suggest that insecurely attached adolescents have a higher risk for substance use than securely attached adolescents (Cooper et al, 1998), although these results were not clear cut, with Kwakman et al (1988) showing that alcohol consumption was not associated with the quality of the attachment relationship.

McArdle et al (2002) in their study of 3,984 14–15 year olds drawn from five European cities (Newcastle upon Tyne, Dublin, Rome, Bremen and Groningen), showed a major positive effect of 'confiding in mother' which was evident in all cities and in relation to substance use in general (they looked at alcohol and a range of drugs separately). They also looked at family structure, but concluded that living with both parents is a less robust barrier to substance use than qualitative aspects of family life, particularly attachment to mothers.

van der Vorst et al (2006a) used a longitudinal study of 1,012 young adolescents to look at the predictive influence of parental attachment on the early development of alcohol use, collecting data on three occasions, each six months after the previous one. They found that attachment was cross-sectionally related to adolescents' alcohol use at all three measurements. The lower the adolescent perceived the quality of the attachment relationship, the more likely the adolescent was to consume alcohol at an early age. However, the longitudinal results of structural equation modelling analyses demonstrated no such effect of parental attachment on adolescents' drinking behaviour, suggesting that a good attachment relationship between parent and child does not prevent adolescents from drinking. In fact, not only do their results do not support the hypothesis that the attachment relationship between parent and child has an important impact on the development of adolescents' drinking behaviour, the longitudinal analyses showed an effect in the opposite direction: an early development of alcohol use has a negative influence on parental attachment. That is, the more the young adolescent consumes alcohol, the less strong the adolescent perceives the attachment relationship with his or her parents, indicating that alcohol use in adolescence could remove the youngster emotionally from his or her parents. It may be that this relationship might then account for the cross-sectional relationship between parental attachment and alcohol use. This study also looked at the interaction between attachment and control, which will be described in a separate section below.

Family Management: A review of parent training suggested that the use of child-management practices which are consistent and contingent (ie rewards and punishments given for specific behaviours), can increase family attachment and cohesion, and decrease disruptive and delinquent behaviours among children (Fraser et al, 1988). It has been suggested that parents who lack effective family management skills are less well-equipped to protect their children from negative peer influence (Wilson, 1980), and that development of social skills in children may be an effective strategy for preventing substance misuse. Poor parenting skills tend to be passed from one generation to the next (Walters, 1994), and parents can feel overwhelmed. Indeed, both excessively authoritarian and permissive parenting have been found to be associated with an earlier onset of drug and alcohol use (Baumrind, 1985). A lack of consistency or structure and a tendency to vacillate between over-permissiveness and

physical or verbal violence have been observed clinically in the parents of misusers of alcohol and other drugs (Wurmser, 1978). In contrast, parents who are responsive, expect a lot from their children, and provide a sense of self-efficacy, tend to have offspring who are less likely to engage in a range of misbehaviour, including drug and alcohol use (Steinberg et al, 1994; Lamborn et al, 1991; Baumrind, 1989). Foxcroft and Lowe (1995) examined the relationship of adolescents' perceived family environment to several aspects of their self-reported alcohol use, smoking behaviour, and involvement with 'hard' drugs, stimulants/sedatives, hallucinogens, cannabis, ecstasy, and solvents. A sample of 1,045 secondary school pupils aged 12–16 years old completed anonymous and confidential questionnaires. The results showed significant relationships between perceived family life and a range of self-reported adolescent drinking, smoking and other substance use involvement variables, but these relationships varied by type of substance and were also different for male and female respondents. Specifically, males who perceived 'authoritarian' or 'neglecting' families reported more alcohol, cigarette and stimulant/sedative substance use behaviour, whereas females who perceived 'warm-directive' families reported less alcohol use but were more likely to say that they would smoke to cope with a problem, and these females also tended to report more stimulant/sedative-related behaviour.

The USA National Survey of Drug Use and Health (Department of Health and Human Services, 2003) shows that where young people reported that their parents would disapprove of them trying marijuana (and this was the majority, approximately 90 per cent), the percentage of young people proceeding to try that drug was low (5.4 per cent), but where parents would show less or no disapproval, far more young people reported trying it (nearly 30 per cent). An Australian survey of over 5,000 students (Olsson et al., 2003) found that "*cannabis use in year 9 was associated with permissive parent attitudes. . .and delinquency. . .and was particularly sensitive to small changes in the quality of the parent-child relationship with risk increasing threefold for those describing their attachment as 'good' compared with 'very good'*" (p.143). The authors concluded that prevention programmes could focus on strengthening parent–child attachment and promoting less permissive attitudes to drug use. Similarly, Ary et al (1993), in a 1-year prospective study of 173 families, found

that parental attitudes toward youth alcohol use were strongly related to changes in adolescent alcohol use over this 1-year period.

It is also the case that some very specific family management practices such as the setting of rules about substances (even if they are not rules aimed at the children) have strong preventative effects. Anderson et al (2004) in their study of the antecedents of smoking, examined 3,555 adolescents and their parents in rural and suburban communities in western Washington State in the USA. They found that, although parental smoking is clearly one important influence on children's smoking, parents antismoking actions are another. They found that adolescents of parents who report having rules about smoking in one's home, using non-smoking sections of public establishments, or asking others not to smoke in one's presence were significantly less likely to smoke at age 17–18 than adolescents of parents who did not engage in antismoking actions. This association of antismoking action and reduced smoking was found for children of both smoking and non-smoking parents. Harakeh et al (2005), in a cross-sectional study including 428 Dutch two-parent families with at least two adolescent children aged 13–17 years, looked at the association between parental rules and communication (which they also referred to as antismoking socialisation) and adolescents' smoking. They looked specifically at parents' and adolescents' reports on an agreement regarding smoking by adolescents, smoking house rules, parental confidence in preventing their child from smoking, frequency and quality of communication about smoking, and parent's reactions to smoking experimentation. Compared with fathers and adolescents, mothers reported being more involved in antismoking socialisation. There were robust differences in antismoking socialisation efforts between smoking and non-smoking parents. Their main findings were that perceived parental influence, and frequency and quality of communication about smoking (when parents discuss smoking-related issues with their children in a constructive and respectful manner) were associated with adolescents' smoking. More specifically, if parents perceive that they can influence their child not to smoke, their adolescents are less likely to smoke. On the other hand, if parents think that they are unable to influence their children's opinions and behaviours, they are more likely to end up with smoking children. Again, this may not be simply that parents who see themselves as more self-efficacious tend to have that borne out. It may instead be because parents who perceive that they have some influence are also those parents

who are more involved in setting rules at home not to smoke, who talk about smoking, and who warn their children about the negative effects of smoking (Engels and Willemsen, 2004). The association between antismoking socialisation practices and adolescents' smoking was not moderated by birth order, parents' smoking or gender of the adolescent.

Similar findings have been shown for the initiation of alcohol use. Yu (2003) measured parental control by asking parents whether they allow their children to consume alcohol under their supervision in four different situations. According to Yu, parents who prohibit adolescents from drinking alcohol at home tend to lower adolescents' alcohol involvement, and parental control of underage alcohol use in the household appears to reduce children's involvement in underage alcohol use. A recent Dutch study (van der Vorst et al, 2005) found that parental imposition of strict rules on drinking prevented adolescents from starting to consume alcohol heavily and frequently, and a later report (van der Vorst et al, 2006b) showed that having clear rules decreases the likelihood of drinking in adolescence, primarily by postponing the initiation into drinking. Furthermore, Engels and van der Vorst (2003) indicated that providing rules decreases the likelihood of adolescents' drunkenness (with these findings being more pronounced for boys than for girls). Indeed, a British study (Marsden et al, 2005) found that while parental discouragement appeared to be associated with reduced drinking frequency in boys, it was related to more frequent drinking in girls.

The setting of rules does not need to be specific to the substance behaviour in question. Dalton and colleagues (eg Dalton et al, 2002; Sargent et al, 2004; Dalton et al, 2006) have examined the relation between parental restrictions on their children watching films and movies, and adolescent use of tobacco and alcohol. Some parents restrict these films because of a concern that viewing smoking and drinking in movies may prompt adolescents to initiate these behaviours (and it is the case that films with a USA 'R' rating contain more smoking than do movies in all other rating categories).

Dalton et al (2002) examined the number out of the 4,544 students (aged between 10 and 14) they surveyed who had tried smoking cigarettes or tried drinking alcohol without parental knowledge. They found that 18 per cent had tried cigarettes and 23

per cent had tried alcohol. Although 90 per cent were younger than 14 years of age, only 16 per cent were completely restricted by their parents from viewing R-rated movies. The prevalence of having tried alcohol was 46 per cent for those with no restrictions on viewing R-rated movies, 16 per cent for those with partial restrictions, and 4 per cent for those with complete restrictions. The prevalence of having tried smoking was 35 per cent for those with no restrictions on viewing R-rated movies, 12 per cent for those with partial restrictions, and 2 per cent for those with complete restrictions. Even after controlling for other factors, including age, parental disapproval of smoking, maternal supervision, maternal responsiveness, peer and family smoking, and child personality characteristics, children who were completely restricted from viewing R-rated movies were significantly less likely to drink (relative risk, 0.30; 95 per cent CI, 0.21 to 0.42) or smoke (relative risk, 0.29; 95 per cent CI, 0.19 to 0.45) compared with those who had no restrictions on viewing R-rated movies. Similarly, Sargent et al (2004) used a prospective study to investigate if young adolescents who report that their parents restrict viewing R-rated movies had a lower risk of trying smoking in the future. 2,596 students aged between 10–14 who at baseline were 'never-smokers' were surveyed again by telephone 13 to 26 months later to determine smoking status. 19 per cent reported that their parents never allowed them to view R-rated movies, 29 per cent were allowed once in a while, and 52 per cent were allowed sometimes or all the time. 10 per cent had tried smoking during the follow-up period. Smoking-initiation rates increased as parental restriction of R-rated movies decreased (2.9 per cent for adolescents reporting that their parents never allowed them to view R-rated movies, 7.0 per cent for those allowed to view them once in a while, and 14.3 per cent for those allowed to view them sometimes or all the time). This strong and statistically significant effect of parental R-rated movie restriction on adolescent smoking remained even after controlling for socio-demographics, social influences (friend smoking, receptivity to tobacco promotions), parenting style (maternal support and control, parental disapproval of smoking), and characteristics of the adolescent (school performance, sensation seeking, rebelliousness, self-esteem). Compared with adolescents whose parents never allowed them to view R-rated movies, the adjusted relative risk for trying smoking was 1.8 for those allowed to watch them once in a while and 2.8 for those allowed to watch them sometimes or all the time. The effect was especially strong among adolescents not exposed to family (parent or sibling) smoking, among whom the adjusted relative risk

for smoking was 4.3 for those allowed to view R-rated movies once in a while and 10.0 for those allowed to view them sometimes or all the time. It seems clear that parental restriction on watching R-rated movies strongly predicts a lower risk of trying smoking in the future, with the effect being largest among adolescents not exposed to family smoking. By exerting control over media choices and by not smoking themselves, parents may be able to prevent or delay smoking in their children.

Of course, the presence of these restrictions need not mean that it was these per se which led to such reduced rates of substance use: it could have been that parents who had clear rules about watching films had equally clear rules about other behaviours. Accordingly, Dalton et al (2006) looked at both how often parents monitored their children's film viewing (and whether or not they had rules about this), and also what parents did about monitoring non-media related behaviours. This time they surveyed 2,606 child–parent dyads, with the children being aged 9–12. They found that less than half (45 per cent) of the children were prohibited from watching R-rated movies; of those who were allowed to watch R-rated movies, one-third always viewed them *with* a parent and two-thirds sometimes watched them *without* a parent. Dalton et al identified four 'movie-monitoring behaviours' and found that less than 10 per cent of the children reported that their parents consistently engaged in all four of them. Even after controlling for parental monitoring of non-media-related behaviours and other covariates, children were at lower risk of smoking and drinking (ie attitudinal susceptibility or early experimentation with either substance) if their parents prohibited them from watching R-rated movies. Parental co-viewing of R-rated movies was associated with a lower risk of child smoking but not drinking, but only if parents consistently monitored what their children watched. Dalton et al (2006) conclude that parental rules and monitoring of children's movie viewing may have a protective influence on children's risk for smoking and drinking, over and above parental monitoring of non-media related behaviours; and that this therefore highlights a potential role for parents in preventing early initiation of tobacco and alcohol use among adolescents.

The other side of rules which restrict behaviour is approval of that behaviour. Foley et al (2004) looked at the relationship between adults' approval of adolescents'

alcohol use among White, Black, and Latino youth and the effects of that approval on most recent alcohol consumption, past 30-day use and binge drinking. They undertook a cross-sectional telephone survey of 6,245 adolescents aged 16–20 from 242 communities across the USA, and assessed perceived availability of alcohol, underage alcohol use, and problems related to underage drinking (ie drinking under age 21). The found that perceived consequences, parent and adult-relative provision of alcohol, and drinking with a parent, were all protective of underage drinking. Respondents who drank with their parents were about half as likely to indicate that they had drunk alcohol in the past 30 days and about one-third as likely to report that they had drunk five or more drinks in a row in the previous two weeks. Perceived consequences for getting caught drinking were also associated with less underage drinking: with more severe punishment (as perceived by the adolescent) being associated with less use. For example, youth who expected that their parents would talk with them if they were caught drinking were almost 1.5 times less likely to drink, whereas youth who expected their parents to take away privileges were about two times less likely to drink. The same linear trend was evident with binge drinking. On the other hand, providing alcohol at a party was associated with a two-fold increase in past 30-day use and binge drinking. There were minimal differences on any of these variables across the three racial/ethnic groups.

Similar findings to many of these have recently emerged in England. Bellis et al (2007) in their analysis of questionnaire result from 10,271 schoolchildren aged 15–16, in North West England, found that 87.9 per cent of their respondents drank alcohol, and of those who drank, 38.0 per cent usually binged when drinking, 24.4 per cent were frequent drinkers and 49.8 per cent drank in public spaces. They found that binge, frequent and public drinking were all strongly related to expendable income and to individuals buying their own alcohol. Similarly, obtaining alcohol from friends, older siblings and adults outside shops were also predictors of risky drinking among drinkers. However, being bought alcohol by parents was associated with both less bingeing and less drinking in public places.

These findings from both the USA and UK suggest that parental provision of alcohol to children in a family environment (as opposed to providing alcohol for a young person's party) may be important. Clearly the context and the level of supervision are

important variables here, and it may be as Bellis et al suggest that parental provision enables the establishment of child–parent dialogues on alcohol and the moderating of youth consumption. However, as they also suggest, getting parents to act in these ways also requires that parents are supported to ensure that they develop only moderate drinking behaviours in their children and drinking only when appropriate.

It also needs to be noted that not all of the research on family rules shows a positive effect on young people's substance use: Hellandsjo Bu et al (2002) showed that a more highly organised family life was associated with commencing alcohol use at under the age of 14 (although not with first intoxication at that age). And Komro et al (2007) showed (with a large sample of 1,388 primarily low-income, and African American and Hispanic, students and their families) that parental provision of alcohol and home alcohol accessibility had a very negative effect on the trajectories of young adolescent alcohol use and intentions. They found that young people's reports at age 12, of parental provision of alcohol and home alcohol availability, and parental report of providing alcohol to their child and the accessibility of alcohol in the home, were associated with significant increases in the trajectories of young adolescent alcohol use and intentions from ages 12–14 years. Student reports of receiving alcohol from their parent or taking it from home during their last drinking occasion were the most robust predictors of increases in alcohol use and intentions over time. Of course, the big difference in this Komro et al study was the age at which the parents were providing the alcohol. In the two studies cited above (Foley et al, 2004; Bellis et al, 2007) the young people were aged 15/16, whereas in this study they were aged 12. It may be that providing alcohol to older adolescents and ensuring that they drink under supervision is a helpful and protective factor at age 15/16, but not so at age 12.

Another issues within the heading of 'family management' is that of parental authority: parents being unsure whether they may do more harm than good by imposing rules on their children, and the interaction between parents attempting to exercise authority and their general parenting style. Jackson (2002) looked at the relationship between perceived legitimacy of parental authority and tobacco and alcohol use during early adolescence, in order to assess the likelihood that young adolescents perceive that parents have legitimate authority regarding cigarette smoking and alcohol consumption; to test whether perceived parental authority

predicts adolescents' use of tobacco and alcohol, and to test the association between parenting style and the legitimacy of parental authority regarding tobacco and alcohol. Survey data were obtained from 1,220 adolescents aged 11–12 and 13–14, in the North Carolina area of the USA. Jackson found that adolescents were significantly more likely to legitimise parental authority regarding tobacco and alcohol than they were to legitimise parental authority regarding conventional or contemporary issues (such as choice of friends, clothes or music). She also found that failure on the part of the adolescents to legitimise parental authority was associated with significantly greater odds of current drinking or smoking among all respondents, and significantly greater odds of intending to drink or smoke among abstinent respondents. Finally, she found a very strong association between parenting style and the odds that parental authority was denied by adolescents. She found that adolescents were most likely to accept parental authority when parents had an authoritative parenting style, whereas adolescents exposed to permissive, authoritarian, and indifferent parenting were from 2.5 to 7.6 times as likely to deny parental authority regarding cigarette smoking and from 1.8 to 5.9 times as likely to deny parental authority regarding alcohol use. As she concludes, these results discredit the myth that adolescents uniformly disregard parental values and rules regarding tobacco and alcohol. In fact, they are much more accepting of parental authority over substance use than over other areas of life, and they are more likely to accept parental authority if the parent has an authoritative parenting style. However, it is also the case that longitudinal research is needed to test for causal relations between general parenting style, adolescents' perceptions of parental authority regarding substance use, and adolescents' risk of substance use.

van der Vorst et al (2005) also provide evidence that parents should have confidence in the effectiveness of their actions in preventing adolescents from drinking. They looked at both rules and communication about alcohol in a sample of 428 Dutch families where both parents and two adolescent siblings (aged 13–16) completed a questionnaire about alcohol-specific parenting and their own alcohol use. They found that the strongest associations were found for providing alcohol specific rules, and for confidence: applying strict rules about alcohol use was negatively related to adolescents' alcohol use; and the more confident the family members were in the effectiveness of the actions of parents to prevent adolescents from drinking, the less the adolescents drank.

Family Communication: A low level of communication between parent and child, poorly-defined and poorly-communicated expectations of a child's behaviour, excessively severe and inconsistent discipline, and high levels of negative interaction or family conflict have all been found predictive of increased risk of substance misuse, delinquency, and conduct disorders (eg Kosterman et al, 1995; Brook et al, 1990). Similarly, the effect of negative consequences (eg scolding/ criticism) on 11–15-year-old children by mothers are themselves negative: the more negative consequences received, the more likely adolescents were to initiate or continue substance use (Andrews et al, 1993). Conversely, regular communication of parental warmth and affection, support for child competencies, presentation of clear prosocial expectations, monitoring of children, and consistent and moderate discipline can inhibit problem behaviour in children (eg Yoshikawa, 1994; Coie et al, 1993).

While the quality and level of family communication generally is important, so too is communication within the family specifically about drugs and attitudes to drugs. A small study of parents and children from three high schools in Wales (Quinn, 1996) showed that while both groups believed they should communicate about drugs, there was disagreement about whether this had taken place. While 93 per cent of the parents believed they had already discussed the subject with their children, only 46 per cent of the children felt this to be the case. Almost 90 per cent of parents and children strongly supported the idea of parents being helped to talk with their children by providing them with leaflets, a talk by a drugs-worker, or watching a TV programme.

While young people have said the impetus for discussion about drugs should come from their parents (Quinn, 1996), and one survey found that 50 per cent of secondary school children would prefer their parents to be the main source of their learning about drugs (O'Connor and Best, 1997), there seems to be lack of effective communication.

A review of four studies on health promotion within the family context also illustrates communication difficulties between parents and children (Hogg et al, 1996). This is particularly demonstrated in relation to sex education, a topic traditionally difficult to

broach: consideration of communication problems here may throw light upon parent–child communication regarding alcohol. Key findings indicate that adults rarely ask children what they want in terms of information or mode of communication. As a result, despite being unhappy with their own parents' approach to sex education, many parents tend to repeat the same mistakes or omissions with their own children. Fathers appear reluctant and less articulate regarding personal issues, and teenagers are more likely to discuss developmental problems with their mothers. Parent–child discussions on sensitive emotional issues tend to be reactive to particular situations. Boys receive less formal sex education than girls, and although boys express a preference for receiving information from their fathers or another male, the research shows that they are less likely to ask for, or receive, advice from fathers. Sometimes mothers assume that fathers had spoken to their sons, but are uncertain as to the extent of the communication (Hogg et al, 1996).

The study from Harakeh et al (2005) about parental antismoking socialisation was discussed in the previous section on family management. They also examined parental communication, and their findings are more complex with respect to this issue. There were two main findings. First, the more frequently parents talk about smoking-related issues with their children, the *more* likely adolescents are to smoke. This is not an isolated finding. Engels and Willemsen (2004) indicated that the *more* frequently parents talk about smoking-related issues with their children, the more likely adolescents are to smoke, and there are other ambiguous reports regarding the effects of the frequency of parent–child communication on children's smoking. Ennett et al (2001) also reported that parent–child communication was a risk factor for adolescents' smoking, and Engels and Willemsen (2004) reported that the frequency of parent–child communication was associated negatively with self-efficacy. Thus, parents who communicated often with their children were more likely to have children who were less confident to resist or refrain from smoking, and subsequently are more likely to experiment with smoking. In contrast, other studies (eg Jackson, 1997; Chassin et al, 1998; Clark et al, 1999) suggest that if parents discuss the issue of smoking with their children, adolescents have a *lower* risk of smoking. The longitudinal findings of Ennett et al, (2001) suggest that when adolescents experiment with smoking, parents communicate more often with their children in an attempt to prevent them from continuing to smoke. Harakeh et al (2005) suggest that this implies

that the timing of smoking-specific communication seems to be important, and that parents should initiate smoking-specific communication before the child has experimented with smoking, as waiting might be counterproductive. Second, they found that the better the *quality* of parent–child communication, the *less* likely are adolescents to smoke. Taken together, these results imply that merely talking frequently to the child about smoking is less important than whether or not these discussions take place in a constructive and respectful manner, and whether or not the child appreciates it. It seems likely that encouraging parents, whether or not they themselves smoke, to discuss smoking-related issues with their children in a constructive and respectful manner is worth exploring as an intervention strategy to prevent young people taking up smoking.

A similar finding emerged from the van der Vorst et al (2005) study mentioned above which looked at both rules and communication about alcohol. Although as reported above they found that both applying strict rules about alcohol use and being more confident about how effective parents could be in preventing adolescent alcohol use were both associated with adolescents drinking less, unexpectedly, they found that frequency of communication about alcohol issues was positively associated with alcohol consumption of adolescents. The authors postulated that these parents might have communicated with their adolescents in a somewhat destructive way, or that they might have talked so often and done so so ineffectively with their adolescents about alcohol topics that their adolescents rebelled and decided to drink more heavily; or (because this was a cross-sectional association) it might be that parents might respond to adolescents' engagement in alcohol use whereby the more the adolescents drink, the more parents talk with their children about drinking.

It seems also to be the case that parental disapproval of smoking has a preventative effect on adolescents. Sargent and Dalton (2001) evaluated the hypothesis that adolescents are less likely to smoke if their parents voice strong disapproval of smoking, looking at cross-sectional and longitudinal associations between perceived parental disapproval of smoking and the adoption of smoking behaviour in rural Vermont adolescents. They found that perceived disapproval of smoking was inversely associated with adolescent smoking, grade in school, parental and sibling smoking, friend smoking, and ownership of tobacco promotional items. After

controlling for confounding influences, adolescents who perceived strong parental disapproval of their smoking were less than half as likely to have higher smoking index levels compared with those who did not perceive strong parental disapproval. In the longitudinal sample of baseline 'never smokers', those who perceived strong disapproval in both parents at baseline were less than half as likely to become established smokers. Those who perceived their parents becoming more lenient over time were significantly more likely to progress to becoming established smokers. In all analyses, the effect of parental disapproval of smoking was stronger and more robust than the effect of parent smoking. In addition, the effect of parent disapproval was as strong for parents who smoked as it was for non-smoking parents. An interaction analysis also suggested that the peer smoking effect is attenuated when both parents strongly disapprove of smoking, suggesting that parent disapproval makes adolescents more resistant to the influence of peer smoking. As the authors note, these findings contrast with the widespread notion that there is little parents can do to prevent their adolescents from becoming smokers. Instead, adolescents who perceive that both parents would respond negatively and be upset by their smoking are less likely to smoke. It seems plausible that interventions that enhance parental self-efficacy in conveying and enforcing no-smoking policies for their children could reduce adolescent smoking.

Similarly, McGee et al (2006) showed that encouraging parents to voice consistent messages about their disapproval of smoking has a significant role to play in discouraging smoking in their adult children and promoting attempts to quit where their children are smokers.

Although the implication for projects involving parents in substance misuse prevention would seem to be that young people prefer their parents to initiate discussion, it also seems that many parents lack confidence in their own knowledge and ability to communicate. The findings from both the USA National Survey of Drug Use and Health (Department of Health and Human Services, 2003) and a major Australian survey of over 5,000 students (Olsson et al, 2003), both described in a previous section above, show that there is a major relationship between parental communication of their disapproval of drug use and subsequent drugs use or not.

Furthermore, despite boys' desire for more effective communication with fathers there does seem to be a real problem in getting fathers involved in projects which could enhance their communication skills (Velleman et al, 2000). Where both parents have been involved in a multi-media training programme, mothers showed new skills in the context of general family interaction, while fathers exhibited significantly improved communication only in problem-solving situations (Kosterman et al, 1995).

It must be accepted that communication with adolescents about alcohol is often complex and difficult. Cox et al (2006) in their qualitative study of 40 parents of young people between the ages of 13 and 17 who were attempting to communicate about alcohol showed that most parents had general worries about alcohol and young people, in terms of its availability and the amount some young people drink. Moreover, many parents felt the need to promote specific messages to young people (eg moderation and safety), and tried to promote specific techniques to initiate conversations about alcohol (eg recounting personal and positive experiences of moderate or sensible alcohol use). Parents often reported that a number of strategies had been effective in their attempts to communicate about alcohol (eg talking 'little and often'). These parents also revealed a number of situations they found difficult to deal with in relation to young people and alcohol use. These included their own child (or someone within their child's peer group) getting very drunk or ill, or getting into trouble with the police as a result of alcohol use. Additional difficulties concerned the attitudes of other parents, alcohol going missing in the house, and the dilemma that if a young person is going to drink, to what extent should they allow them to drink in the family home. These parents also reported a wide range of approaches that they perceived to have helped in relation to communicating about, and the supervision of, alcohol use within the family. The main approaches included using personal experiences about the use of alcohol, being open and honest when communicating about alcohol, and giving young people clear messages. Many parents also suggested the importance of 'being there' for young people when they need to talk, and talking to them about alcohol use from a young age. Incorporating alcohol use into family life in a safe and supervised way was suggested to be a more effective approach than mystifying alcohol, and parents suggested the need to let young people experiment under parental supervision. Negotiating with young people, in terms of rules, restrictions, and limitations in relation to alcohol use was also deemed to be

important, as was using the media to initiate conversation and to demonstrate positive/negative examples of alcohol use. Keeping in touch with other parents, particularly parents of peers, to share information and advice about alcohol (mis)use, was also reported by parents as being a helpful approach to dealing with the issues associated with alcohol use within the family.

Parental Monitoring and Supervision: Results from a number of studies demonstrate that parental supervision or monitoring of children (i.e. knowing where children are and what they are doing) can prevent or delay onset of youthful substance use. Delay in onset may reduce risk of more serious involvement (Robins and Przybeck, 1985): strong relationships have been found between early initiation and later problematic misuse of alcohol and other drugs (Hawkins et al, 1992; Kandel et al, 1986; Kandel, 1982; Pitkänen et al, 2005), and this underscores the need for interventions which are effective in preventing early initiation (Kosterman et al, 1995). Surrogate parental monitoring, by responsible adults or older peers, in structured after-school programmes or recreational activities, may also be effective (Chilcoat and Anthony, 1996; Richardson et al, 1989).

McArdle et al (2002) in their study of 3,984 14–15 year olds across five European cities showed a major effect of parental supervision on young people's use of both alcohol and drugs, although this effect was more marked for boys than girls (ie boys were more likely than girls to use alcohol and drugs if not supervised). Barnes et al (2000) in their interview study over a 5-year / 6 interview programme of 506 adolescents aged between 13–16 (mean age, 14.5 years) at Wave 1 and 18–22 years old (mean age, 19.9 years) at Wave 6, showed that parental support and monitoring significantly predicted both adolescents' initial drinking levels as well as their rates of increase in alcohol misuse once started. They showed that parental support was related to alcohol use/misuse through parental monitoring, and that high parental monitoring resulted in low initial levels of adolescent alcohol misuse, and high parental monitoring also diminished the upward trajectory of alcohol misuse throughout the adolescent years.

There is a strong relationship between lack of parental monitoring and a range of risky behaviours, not just alcohol use. DiClemente et al (2001) showed with a sample of

522 Black female adolescents between the ages of 14 and 18 years residing in low-income neighbourhoods that adolescents perceiving less parental monitoring were more likely to have a history of alcohol use and greater alcohol consumption in the past 30 days, and were also more likely to: test positive for a sexually transmitted disease, report not using a condom at last sexual intercourse, have multiple sexual partners in the past 6 months, have risky sex partners, have a new sex partner in the past 30 days, not use any contraception during the last sexual intercourse episode, have a history of marijuana use and use marijuana more often in the past 30 days and have a history of arrest. These authors conclude that a consistent pattern exists of health risk behaviours and adverse biological outcomes associated with less perceived parental monitoring.

Borawski et al (2003) looked at the relative importance of parental monitoring, negotiated unsupervised time with peers, and whether the young people (692 adolescents in 9th and 10th grades (aged 14–16, with a mean age of 15.7) perceived that their parents trusted them, in predicting reported substance use (alcohol, tobacco, and marijuana) as well as sexual activity, and sex-related protective actions (eg condom use, carrying protection). They found that, in males, high parental monitoring was associated with less alcohol use, as well as with consistent condom use. For females, however, they found that parental monitoring had no effect. They found that, for both males and females, increased negotiated unsupervised time was strongly associated with increased risk behaviour (eg alcohol and marijuana use, and sexual activity) although if the young people did engage in sexual activity, they were also more likely to use protection. Finally, perceived parental trust served as a protective factor against sexual activity, tobacco, and marijuana use (but not alcohol use) in females, and against alcohol use in males. Clearly, as with all studies which look at associations, it is unclear if there are direct causal mechanisms at work, or if some other common causal factor(s) could be associated both with variables such as perceived parental trust, parental monitoring, parental supervision etc, and with changes in risk behaviours.

The influence of parental supervision may be direct, in that it keeps children away from substances (alcohol, cigarettes, drugs), or indirect in that it reduces a child's contact with substance-using peers. A lack of parental monitoring may allow the

process of substance use to begin, and contact with peers may exacerbate the behaviour (Steinberg et al, 1994). The combined factors of low level parental monitoring plus substance-using peers may serve as a marker of increased vulnerability in pre-teen children. A three-year longitudinal study of 926 children, beginning at age 8–10 years, found that higher levels of monitoring were associated with a two-year delay in onset of drug taking. It was estimated that up to 20 per cent of the incidence of marijuana, cocaine, and inhalant use could be prevented if the lowest quartile of parental monitoring increased to that of the second quartile, and a 56 per cent reduction could be achieved with an increase to the highest quartile level of monitoring. Higher levels of monitoring were shown to protect children against misuse even when exposed to peers who used a variety of drugs (Chilcoat and Anthony, 1996).

The above analysis is of course based on a relatively simplistic set of causal assumptions: that there is a direct causal link between supervision or monitoring and drinking and other risky behaviour. The problem with 'associations' is that it is not even clear which direction any putative causal mechanisms might go in: it may be that as children start to drink and indulge in other risky behaviours, parents 'give up' more and monitor or supervise less extensively. Nevertheless, longitudinal studies (eg Barnes et al, 2000, cited above) do imply that there is a causal mechanism, and that the mechanism is in the direction of parental behaviours leading to their children behaving in certain ways, as opposed to child behaviours leading to parents altering their behaviour (although of course there will be interactions between the sets of behaviours, as van der Vorst et al (2006a, 2007a) found, as described in a later section below).

It is also likely that any one set of parental behaviours (whether it is supervision and monitoring, or management practices and rules, or communication, or any of the other areas discussed) is a proxy for a combination of related family-culture variables. In that case, simply altering just one of those variables (as Chilcoat and Anthony, 1996, suggested, above) in isolation and without helping the parents at the same time to change other areas, so that their family life and family culture was more 'preventative', is unlikely to lead to the major changes in child risk behaviour which were suggested.

Returning to the issue of parental supervision alone, however, there is further evidence that it does have powerful effects. Studies suggested that it does not just delay *onset* of drinking and other substance use: it also *protects against misuse* in those who have already started. Higher levels of monitoring were shown to encourage boys who are heavily involved in substance use to reduce use, and girls who are experimenting to stop (Steinberg et al, 1994). One Australian study of teenage students found the only substantially distinguishing characteristics of users of all substances were a higher rate of truancy, and a greater number of nights spent without adult supervision of recreation (Crundall, 1993). Ledoux et al (2002) found in their analysis of ESPAD data from France and the UK, which looked at 1,174 boys and 1,110 girls from France and 1,280 boys and 1,361 girls from the UK, that those from both France and the UK who were less closely monitored were more likely to be heavy substance users than other students. In fact, logistic regression showed that parental knowledge of the whereabouts of their offspring on Saturday evenings was the strongest factor, in both countries, predicting heavier substance use across all of their substance use variables (amount of alcohol consumption in the past 30 days, amount of alcohol consumption in the past year, binge drinking, number of times drunk, amount of cigarette smoking in the past 30 days, use of cannabis, use of other drugs).

Parental supervision seems to be a highly important variable, which has an impact on many other areas too. Analyses of combined data from longitudinal studies indicate that low level parental involvement and supervision of children have a strong predictive power for anti-social behaviour (Loeber and Stouthamer-Loeber, 1986; Loeber and Dishion, 1983), while a study of 1,000 young people in the west of Scotland, looking at family structure, family activities, and conflict, found that young people who spent more time with their family were less likely to smoke or to have tried illicit drugs, were more likely to have left school with qualifications and, if female, were less likely to be pregnant by age 18 years (Sweeting and West, 1996).

Given how important parental monitoring clearly is, it is unfortunate that parents are not aware of whether or not they are doing it! The CASA (2006b) report on the 2006 National Survey of American Attitudes on Substance Abuse showed that there was

considerable disagreement between parents and their teenage children over how strong their monitoring was. Although 80 per cent of parents believed that neither marijuana nor alcohol is usually available at the parties which their teenage children attend, 50 per cent of their teenage children stated that they attend parties where alcohol, drugs (including marijuana) or both *are* available. Similarly, 98 per cent of parents say they are normally present during parties which they allow their teenagers to have at home; but 33 per cent of their teenage children report that their parents are *rarely or never* present at the parties they attend. CASA (2006b) also showed that alcohol is 16 times more likely to be available at parties where parents are not present as opposed to where parents are present. This study showed that 49 per cent of the teenagers who say that their parents are *rarely or never* at home during parties report that alcohol is available at most or all of the parties they attend, compared to only 3 per cent of the teenagers who say that parents are *always* present at parties they attend. There is also disagreement within the group of children and parents who agree that they are always there at parties: 99 per cent of these parents say they would not be willing to serve alcohol at their teenager's party, but 28 per cent of their teenage partygoers say that they have been at parties at a home where parents were present and where teenagers were drinking alcohol.

It is however possible to train parents to monitor their children more effectively. Stanton et al (2000) developed and evaluated an intervention (ImPACT) seeking to increase monitoring (supervision and communication) by parents and guardians of African American youth regarding high risk and protective behaviours. A total of 237 parents and one each of their youth (ages 12–16 years) were recruited from eight public housing developments located in a city in the mid-Atlantic region of the USA. The intervention included a 22-minute video containing several main messages: (a) Monitor youth (know where they are, whom they are with, and what they are doing); (b) talk with youth about sex before they begin to have sex or engage in other risky behaviours; (c) convey facts about acquired immunodeficiency syndrome (AIDS) (eg AIDS is the leading cause of death for young African Americans, AIDS is a debilitating disease); (d) be aware that both parents and youth should know how to use a condom; (e) emphasise self-protection including abstinence and/or the use of both condoms and some other forms of contraceptives; and (f) emphasise that drug or alcohol use possesses risks and, in addition, if combined with sex, may lead to risky

sexual behaviours. They found that parents and their children agreeing as to whether or not the young person had engaged in several risk and protective behaviours over the previous 6 months (which also implies that the parents know what their child is doing) was positively correlated with protective behaviours, perceived parental monitoring, and good parent–youth communication. They also found that at baseline, parents significantly underestimated their youth's risk behaviours. However, at 2 and 6 months post-intervention, the ImPACT program increased similarity of reports by youth and their parents of youth involvement in risk and protective behaviours. Although only tangentially related to alcohol use, this shows that parents can be taught parental monitoring skills and can implement them.

Parental Modelling: Adolescent substance use is encouraged by environmental factors such as the behaviour of influential role models, social support that encourages use, and easy access to a variety of substances (Perry and Kelder, 1992). Of these, parental modelling seems the most important. For example, Forney et al (1989) showed in their study of adolescent drinking that parental behaviour was the most influential for young people. And Seljamo et al (2006) in their 15-year prospective follow-up study found that fathers' current heavy drinking and parental early drinking were the best predictors of 15-year-olds' heavy drinking.

Andrews et al (1993) found that parent behaviour was a major influence on adolescents of 11 through to 15 years of age, in the initiation into and continued use of alcohol, cigarettes, and marijuana. This study considered both substance-specific and generalised effects of parent substance-use, attitudes towards use, and behaviour regarding use. Adolescents who initiate the use of a particular substance at an early age tend to have parents who caution less often about use, mothers who use the substance frequently, and fathers with a positive attitude towards the substance.

Similarly, Ary et al (1993) in their 1-year prospective study of 173 families, found that parent modelling of alcohol use (as well as parental attitudes, mentioned in the previous section) was strongly related to changes in adolescent alcohol use over this 1-year period, and Hellandsjo Bu et al (2002) in their study of 3,368 teenagers aged 12–18 years showed that children who started using alcohol, and getting intoxicated, under the age of 14 reported more frequent parental drinking. They also reported that

the observed, actual drinking frequency was more important than parents' attitudes and norms for drinking, reinforcing the idea that it is parental modelling rather than a transfer of drinking norms which are important.

A recent USA study has provided support for the idea that there is a strong relationship between parental drinking and that of their children. SAMHSA (2009) looked at the relationship between fathers' drinking and that of their teenage children (aged 12–17). They found that the rate of past year alcohol use among adolescents was lower for those who lived with a father who did not use alcohol in the past year than for those who lived with a father who used alcohol but did not have an alcohol use disorder and that both of these rates were lower than for those who lived with a father with an alcohol use disorder (21.1 per cent versus 33.2 per cent versus 38.8 per cent, respectively). They also found that the percentage of adolescents using illicit drugs in the past year increased with the level of paternal alcohol use, with illicit drug use reported by 14.0 per cent of adolescents who lived with a father who did not use alcohol in the past year, 18.4 per cent of those who lived with a father who used alcohol but did not have an alcohol use disorder, and 24.2 per cent of those who lived with a father with an alcohol use disorder.

There has been a great deal of research into the impact of parental smoking on the subsequent smoking behaviour of their children. A Welsh study (Smith et al, 1995) of 1,281 school pupils, 15–16 years of age, found that fathers' smoking was positively related to experimentation with smoking in boys, as was mothers' smoking with girls. Scragg and Laugesen (2007) undertook a National New Zealand cross-sectional survey of 14,936 female and 14,349 male Year 10 students (aged 14 and 15 years) who answered an anonymous self-administered questionnaire, looking at the influence of smoking by family (and best friend which will be reported below in the section in peers) on adolescent tobacco smoking. They found that adolescents with both parents smoking had the highest smoking risk compared with those with one or neither parent smoking. The relative risk of adolescent daily smoking associated with both parents smoking, compared with neither, varied with ethnicity, being 2.34 in Maori, 2.87 in Pacific Islanders, 11.37 in Asian, and 4.92 in European/Other students, adjusting for age and sex. Adolescent smoking was also positively associated with pocket money amount and living in a home where smoking was allowed, both parental-related

factors. Combined exposure to one or more of the following factors – parental smoking, pocket money >$5 per week and smoking in the house – explained 64 per cent of daily adolescent smoking. The authors concluded that parental behaviour is a key determinant of smoking by New Zealand adolescents and explains a similar proportion of daily adolescent smoking to that by peer smoking.

Peterson et al (2006) used a 9-year prospective study of over 3,000 children and their parents to investigate the influence of smoking by none versus one versus two parents when the children were young (3rd grade), on whether the children subsequently became daily smokers. These authors claim that this is the only study to investigate the prediction of child/adolescent smoking at the end of the smoking acquisition period (12th grade – 17–18 years) by parental smoking at the start of the period (3rd grade – 8–9 years). Their analyses showed that having even one parent who smokes substantially increases the risk that children will become daily smokers, relative to families where neither parent smokes. Unlike the Smith et al (1995) study above, this one found no evidence that the increased risk depends on parent or child gender.

Engels et al (2004) in their longitudinal study of 1,595 adolescents showed that there are both direct and indirect effects of parental modelling (in terms of affecting young people's susceptibility to peer influences and by affecting friendship selection). They found that both parents' smoking and friend's smoking were moderately related to adolescent smoking onset, and that parental smoking seemed to affect the selection of new friends: in particular, adolescents with smoking parents were most likely to become affiliated with smoking friends.

Not all the evidence demonstrates this strong association between parental modelling of alcohol or tobacco use and their children's behaviour. Yu (2003) looked at the association between parental alcohol-related behaviours and children's drinking. He argued that although past research has established an association between children's alcohol-related behaviours and parents' use of and attitudes toward alcohol, in fact most studies tended to measure parental use and attitudes through a proxy (ie children's perception). He wished to look at actual parental use and attitudes, and the extent to which these influence children's alcohol behaviours. Looking at 642 dyads of parents and children (ages 15–18), he used parents' reports on alcohol use and

attitudes toward alcohol and examined their impact on children's alcohol use. He found that parental use and attitudes did *not* seem to significantly affect children's alcohol use, although the extent to which parents prohibit children from using alcohol at home did tend to reduce children's alcohol involvement, as reported above under parental rules. He also found (in partial support of a modelling hypothesis) that the greater the amount of time spent with alcohol-using parents, the more likely the children were to use alcohol.

This finding of a lesser degree of influence than had been supposed is an unusual finding, however, and most studies support a more direct influence. However, knowing that there is a relationship does not tell us what the processes are that underlie it. Brody et al (2000) undertook a 3-year prospective study of 132 White families in southern USA, examining the way that children internalised their parents' alcohol-use norms and the effect this had on their own subsequent alcohol-use behaviour. Parents' alcohol-use norms were assessed at year 1 (when children were aged 10–12), children's alcohol-use norms were examined at year 2, and children's own drinking behaviour was looked at in year 3, when they were 12–14. They found clear relationships between parent' alcohol-use norms and children's subsequent drinking behaviour, and also that this link was mediated through the children's own norms, finding especially that father–child relationship processes moderated the links between fathers' and children's norms and between children's norms and subsequent alcohol use.

Despite the research evidence, parents do not have a strong sense of the importance of parental influence and modelling of behaviour on subsequent behaviour in their children (Hayes et al, 2004; Jackson, 2002; Kodl and Mermelstein, 2004; Sieving et al, 2000a; Graham et al, 2006). It would seem to be of primary importance to educate parents of the importance of their own behaviour in influencing young people's use of alcohol, and suggests the need for public health interventions that inform parents of young children that their own substance-use behaviour increases their children's chances of their own future use.

Interactions between these areas: There is considerable evidence that each of the areas briefly reviewed above are important in enabling us to understand how the

family and specifically parents enable young people to learn about alcohol and other substances, and influence these young people in their subsequent substance use behaviour. A number of studies have looked at the interactions between these areas.

McVie and Holmes (2005) showed that (unsurprisingly) between the ages of 12 and 17, the prevalence of smoking, drinking and illicit drug use increased continuously among their cohort members. They found little or no gender difference in terms of 'weekly drinking in the last year', but they did show that family characteristics and parenting styles were found to play a significant role in the substance using behaviour of young people. There was evidence of a causal link between these factors, since family related factors at age 15 predicted substance use at age 17. They showed that excessive drinking (and involvement in drug use) *among parents* strongly predicted young people's involvement in *smoking and drug use*, although parents' drinking and drug use was not related to their children's *drinking*. They suggested that this difference may arise because smoking and drug use are considered deviant, whereas drinking is more widely accepted. Other than parental modelling, they looked at a number of other areas related to parenting, finding that five dimensions of parenting consistently predicted involvement in drinking, smoking, and drug use. Ineffective parenting methods were characterised by high levels of parent/child conflict, poor parental monitoring and lack of leisure time spent doing activities together. Substance using children were likely to conceal information about their social activities from their parents, although they were more likely to report engaging in positive forms of conflict resolution. They argue that these findings are broadly supportive of social learning theory and indicate the need to provide information on methods of parenting which may be more effective in tackling various forms of problematic behaviour, including substance use.

Kodl and Mermelstein (2004) also looked at the relationship between parental modelling and other family factors such as parental beliefs, self-efficacy, and family relationships, in relation to smoking. They explored parental beliefs and behaviours designed to convey an anti-smoking message across levels of self-reported parent and adolescent smoking behaviour, while at the same time exploring parental self-efficacy, beliefs about smoking, the family relationship, anti-smoking messages, reactions to smoking, and household smoking rules. Participants were 345 children

aged 11–12, 13–14, and 15–16, and their parents. They found that parents with a history of smoking, and parents of adolescents who had tried smoking, were less efficacious, held weaker anti-smoking beliefs, and less often reported household smoking rules.

Duncan et al (1998) looked at longitudinal data from 664 adolescents (aged between 14 and 17, from the Pacific Northwest of the USA) around the development of use of alcohol, cigarettes, and marijuana. They were assessed at three time points, over an 18-month period. Not surprisingly, there were significant increases in use of all three substances over this 18-month period. Their latent growth modelling framework suggested that growth or change in the various substance use behaviours could be adequately modelled by a combination of variables: poor parental monitoring, parent-child conflict, peer deviance, academic failure, gender, and age, were the significant predictors of both initial use and the trajectory of further substance use.

van Zundert et al (2006) explored the role of parents' alcohol use (modelling), general parenting practices (support and behavioural control – supervision and monitoring), and alcohol-specific parenting practices (alcohol-specific rule enforcement and alcohol availability at home) on adolescent alcohol use, using cross-sectional data from 839 adolescents. They found that alcohol-specific parenting practices (alcohol-specific rule enforcement and alcohol availability at home) appear to be highly important in regulating adolescent alcohol use. They also found that parental alcohol use (modelling) was directly related to adolescent alcohol use (there was a positive association between higher drinking in either parent drinking more and adolescents drinking more), as well as being *indirectly* related, by influencing alcohol-specific rule enforcement (the more parents drank, the less they enforced rules; and the less they enforced rules, the more their adolescents drank). Behavioural control was also related to alcohol-specific rule enforcement.

The van Zundert et al study was cross-sectional. van der Vorst et al (2006b) looked at the impact of alcohol-specific rules, parental norms about early drinking, and parental alcohol use on adolescents' drinking behaviour, by examining longitudinal data collected from 416 families consisting of both parents and two adolescents (aged 13 to 16 years). They found that having clear rules decreases the likelihood of drinking in

adolescence, but that, longitudinally, alcohol-specific rules have only an indirect effect on adolescents' alcohol use, namely through starting to drink at an older age. Analyses focusing on explaining the onset of drinking revealed that having strict rules was related to the postponement of drinking initiation of both older and younger adolescents. Further, parental norms about adolescents' early drinking and parental alcohol use were associated with having alcohol-specific rules. Parental norms were also related to adolescents' alcohol use. The authors concluded that having strict rules is related to postponement of drinking, and that having alcohol-specific rules depends on other factors, such as parental norms, and parents' own alcohol use, thus underlining the complexity of the influence of parenting on the development of adolescents' alcohol use.

As described in the section on attachment above, van der Vorst et al (2006a) used a longitudinal study of 1,012 young adolescents to look at the predictive influence of both parental attachment and parental control on the early development of alcohol use, collecting data at three times, each 6 months after the previous one. As reported above, they found that attachment was cross-sectionally related to adolescents' alcohol use at all 3 measurements, but that longitudinally, attachment did not impact on later alcohol use. They also showed that parental monitoring and supervision was both cross-sectionally and longitudinally related to adolescents' alcohol use at all 3 measurements: monitoring prevents adolescents from drinking more heavily, although monitoring has a stronger effect on boys than on girls. They also found, as with the attachment data, that there was a relationship in the opposite direction with monitoring and alcohol use: as adolescents started to drink, so that had an effect on parents' monitoring and supervision: the more they drank, the lower the levels of monitoring and supervision.

These results led this research team to look further at bi-directionality. van der Vorst et al (2007a) examined the bi-directional associations between providing alcohol-specific rules and adolescents' alcohol use, and the interaction with both of these with personality. They used longitudinal data (three waves in 2 years) from 428 families, consisting of both parents and two adolescents (aged 13–16 years). They found that providing clear alcohol-specific rules lowers the likelihood of drinking initiation, regardless of the age of the children. Again, they found bi-directionality: once

adolescents have established a drinking pattern, the impact of parental alcohol-specific rules declined or even disappeared. They also found no influence of personality: the personality traits they examined did not moderate the association between providing alcohol-specific rules and adolescents' alcohol involvement. They conclude that, especially during the initiation phase of drinking, parents could prevent the drinking of their offspring, regardless of the age or personality of their youngsters, by providing clear alcohol-specific rules.

This bi-directionality is closely related to Dishion's concept of 'premature adolescent autonomy'. Dishion et al (2004) postulate that 'premature autonomy' describes a developmental dynamic where parents of high-risk adolescents reduce their involvement and guidance when confronted with challenges of problem behaviour and the influence of deviant friendships. They tested this idea on a sample of 206 boys which were part of the Oregon Youth Study boys, whose family management practices and friendships were observed on videotaped interaction tasks. They looked at longitudinal trends between deviant friendship interactions and family management. They found that deviant friendship processes at age 14 were associated with degradation in family management during adolescence. A comparison of antisocial and well-adjusted boys clarified that parents of antisocial boys (ie ones that started early and persisted in their antisocial behaviours) decreased family management around puberty, in comparison to parents of well-adjusted boys who maintained high levels of family management through adolescence. They showed that, in predicting late adolescent problem behaviour, there was a statistically reliable interaction between family management degradation and deviant peer involvement in adolescence, in support of the premature autonomy hypothesis. Adolescent males involved in deviant friendships, and whose parents decreased their family management, were most likely to use marijuana and commit antisocial acts at age 18.

White et al (2000) undertook a study with a considerably longer follow-up period than most, collecting prospective longitudinal data from 218 males and 214 females who were age 15 at Time 1 and age 28 by Time 4. They were interested in the effects of parental drinking and smoking, and parental warmth and hostility, on their offsprings' drinking and smoking over time. The found rather different effects for drinking as opposed to smoking. Parent drinking rather than warmth or hostility predicted heavy

drinking by offsprings and mothers' drinking was a slightly better predictor than fathers' drinking for both daughters and sons. On the other hand, for smoking, fathers' warmth and hostility was the best predictor of heavy smoking by sons, although neither modelling nor parenting style significantly predicted female heavy smoking. There were few interactions between parental modelling and parenting behaviour to predict smoking or drinking in their offspring. This long term study tends to corroborate the findings reported above (Andrews et al, 1993; Ary et al, 1993; Hellandsjo Bu et al, 2002) of the importance of parental modelling.

Siblings

Until relatively recently, most research into the influence of the family concentrated on parents, with the role of siblings being largely neglected, despite the long-term nature of a sibling relationship. Over the past decade, however, some attention has started to be paid to siblings.

Ary et al (1993) looked at the relative influence of parents versus siblings in terms of their attitudes towards alcohol and their modelling of drinking behaviour by studying 173 families with two or more children. Although their main findings were that parent attitudes toward their adolescents' alcohol use and parental modelling of alcohol use were the most strongly related to changes in adolescent alcohol use, they also found that sibling modelling also influenced adolescent alcohol use. Windle (2000) used data from over 570 middle adolescents to evaluate a multivariate developmental model of predictors of adolescent alcohol and other drug use, and alcohol problems. He found that both sibling and peer substance use were more strongly related to adolescent substance use than parental alcohol use, and that sibling substance use was a robust-predictor of peer substance use. Sibling substance use also predicted coping motives for drinking by the target adolescent, implicating possible role modelling or imitation for drinking under stressful conditions and a preference for avoidance coping strategies. He found that adolescent alcohol use was a significant-predictor of both alcohol problems and illicit drug use, although a number of other elements were also statistically significant predictors of alcohol problems, over and above their influence on level of alcohol use, including coping motives for drinking, stressful life events, and peer substance use.

Pomery et al (2005) used 2 waves of panel data from 225 African American families to investigate older siblings', as well as parental and peer, contributions to adolescents' substance use. They found that older siblings' behavioural willingness to use substances at time 1 predicted target adolescents' use at time 2, controlling for other time 1 variables. Regression analyses revealed an interaction between targets' and siblings' behavioural willingness, such that targets were more likely to use at time 2 if both they and their siblings reported behavioural willingness at time 1, with this interaction being stronger for families living in high-risk neighbourhoods. They also found an interaction between sibling and peer influences, showing that low sibling behavioural willingness was associated with less evidence of peer influence.

Trim et al (2006) looked again at sibling influence on alcohol use, but this time within a high-risk young adult sample. They tested whether siblings prospectively influenced each other's alcohol use and how gender matching, age differences, and family conflict might moderate such effects, using data from 169 sibling pairs in an ongoing longitudinal project examining children of ‘alcoholics’ and matched controls. The date used in this study were collected at two time points 5 years apart. They found that older sibling alcohol use predicted younger sibling alcohol use, even after controlling for membership in a shared peer group and for parental ‘alcoholism’. But they also found that moderator variables qualified this effect, such that older sibling influence was significant only among sibling pairs who were of the same gender, closer in age, and from higher conflict families. They also found that younger siblings influenced their older ones, suggesting the presence of reciprocal influences, although these effects were significant only for sibling pairs close in age.

van der Vorst et al (2007b) looked further at these bi-directional and reciprocal influences in adolescent sibling pairs. They used longitudinal data from 416 sibling pairs, and explored which factors (gender constellation of the sibling pair, quality of the sibling relationship, and similarity in norms about alcohol) affect reciprocal influences in the alcohol use of siblings. Descriptive analyses showed that, although older siblings drank more frequently and intensively than the younger siblings, moderate associations were found between frequency and intensity of drinking in siblings. Further analysis demonstrated that alcohol use of the older sibling marginally affected drinking of the younger sibling one year later, whereas drinking of the

younger sibling did not affect drinking of the older sibling. They also found in these data no moderating effects on the association between siblings' alcohol use and adolescents' drinking over time of having the same or opposite gender as a sibling, or a low or high quality relationship, or the same or different norms about alcohol.

In summary: how do children learn about alcohol: direct influence from the family.

As can be seen from this section of the review above, we know quite a lot about how families influence children's learning about and subsequent behaviour towards alcohol. Relational aspects (eg cohesion, discipline, communication) of families seem to have a much greater influence than structural aspects (eg single parent families, family size, birth order), although there is in many studies a significant influence of being in a one-parent or non-intact family. However, it is probable that being in such a family serves to reduce the exposure to or the influence of some of the other, more relational, aspects. Family cohesion is one such aspect, and liking or being satisfied with their relationships with their parents and wanting to be like their parents, a high level of family co-operation, more family support, and higher levels of family bonding are all elements that have been shown to have positive effects on age of initiation, and subsequent levels of alcohol use. Interestingly, attachment to individual parents seems not to be an important factor. On the other hand, a series of studies from the USA have suggested that the family regularly eating an evening meal together (five or more times per week) is one of the most significant protective factors. It is likely that regular family dinners are such a powerful indicator for many reasons: they can be seen in proxy terms (sitting and eating together is an excellent proxy for many elements of family cohesion and bonding); sitting and eating together allows time for many other important bonding activities, such as family communication and the chance for parents to show interest in their children, etc; and the time spent together every evening on a meal reduces the time available to be spent outside of the family on alcohol-related activities.

Insisting that the family comes together almost every evening for dinner is related to family management practices, and lots of research demonstrates how important these are. The use of child-management practices which are consistent and contingent (ie rewards and punishments given for specific behaviours), can increase family

attachment and cohesion, and decrease disruptive and delinquent behaviours among children.

Parents who are responsive, who expect a lot from their children, and provide a sense of self-efficacy, tend to have offspring who are less likely to engage in a range of potentially problematic behaviours including drug and alcohol use. An important issue is parents being able to balance the two dimensions of 'care' and control': both excessively authoritarian and permissive parenting have been found to be associated with an earlier onset of drug and alcohol use. The issue of parental expectations is important: where young people report that their parents would disapprove of them trying marijuana, the percentage of young people proceeding to try that drug is low, but where parents show less or no disapproval, far more young people report trying it. Similarly, permissive parent attitudes are associated with using cannabis at an earlier age. These findings link with the 'care' versus 'control' issue: having (and communicating) clear expectations is a sign of authoritative parenting, whereas not having (or communicating) such expectations is a sign of over-permissive parenting.

Expectations also link with rules, which seem again to have strong preventative effects, as long as they are not also associated with excessively authoritarian parenting. Parents who prohibit adolescents from drinking alcohol at home tend to lower adolescents' alcohol involvement. Parental imposition of strict rules on drinking seems to prevent adolescents from starting to consume alcohol heavily and frequently. Providing rules about drinking decreases the likelihood of adolescents' drunkenness and reduces drinking frequency (although this is the case more for boys than for girls, and some studies suggest that these rules may be related to more frequent drinking in girls). With smoking, parents having rules about smoking in one's home, using non-smoking sections of public establishments, and asking others not to smoke in one's presence meant that adolescents were significantly less likely to smoke at age 17–18, even if their parents were themselves smokers.

There is also a link with parental self-efficacy. Parents who perceive that they can influence their child not to smoke are much more likely to have that effect. On the other hand, if parents think that they are unable to influence their children's opinions and behaviours, they are more likely to end up with smoking children. Not

surprisingly, parents who have themselves smoked, and parents of adolescents who have tried smoking, are less efficacious, hold weaker antismoking beliefs, and less often report household smoking rules.

Many parents are unsure if they should impose their authority, worrying that they may do more harm than good by imposing rules on their children. In fact, adolescents are significantly more likely to legitimise parental authority regarding tobacco and alcohol than parental authority regarding conventional or contemporary issues (although if the adolescent does not legitimise parental authority, this is associated with a greater likelihood of intending to drink or smoke (among abstainers) or of drinking or smoking more). Again, this issue links back to parenting style: adolescents are most likely to accept parental authority when parents have an authoritative parenting style, whereas adolescents exposed to permissive, authoritarian, and indifferent parenting are all more likely to deny parental authority regarding cigarette smoking and alcohol use.

Interestingly, the setting of rules does not need to be specific to the substance behaviour in question. A series of studies have examined the relation between parental restrictions on their children watching films and movies and adolescent use of tobacco and alcohol. These have shown that, even after controlling for other factors such as age, socio-demographics, parenting style (maternal support, supervision and control, parental disapproval of smoking), peer and family smoking, social influences (friend smoking, receptivity to tobacco promotions), and characteristics of the adolescent (school performance, sensation seeking, rebelliousness, self-esteem), children who were completely restricted from viewing R-rated movies were significantly less likely to drink or smoke compared with those who had no, or even partial, restrictions on viewing R-rated movies. The effects on smoking were strongest among adolescents not exposed to family (parent or sibling) smoking. These effects of parental rules and monitoring of children's film viewing occur irrespective of parental monitoring of non-media related behaviours. It seems clear that, by exerting control over media choices (and by not smoking themselves), parents may be able to prevent or delay smoking and drinking in their children.

The other side of rules which restrict behaviour is approval of that behaviour. Parent and adult-relative provision of alcohol, and drinking with a parent, as well as perceived consequences, are all protective of underage drinking. On the other hand, providing alcohol for an adolescent's party is associated with increases in use and binge drinking. It seems clear that the context and the level of supervision are important variables here. It may be that parental provision enables the establishment of child–parent dialogues on alcohol and the moderating of youth consumption, but it needs to be borne in mind that utilising parents in this way requires parents being supported to ensure that they develop only moderate drinking behaviours in their children and drinking only when appropriate. However, if these provisos are taken into account, then there does seem to be some evidence that parental initiation, alongside parental modelling and parental supervision, may reduce the risks of heavy or inappropriate drinking in mid-adolescence (aged 15/16), although probably not in younger children (aged 12).

It has been suggested that parents who lack effective family management skills are less well-equipped to protect their children from negative peer influence. Poor parenting skills tend to be passed from one generation to the next, and parents can feel overwhelmed.

There is no point in having rules if they are not communicated. A low level of communication between parent and child, poorly-defined and poorly-communicated expectations of a child's behaviour, and high levels of negative interaction or family conflict have all been found to be predictive of increased risks in many areas, including of substance misuse. Ineffective communication is also unhelpful: increasing the amount of scolding or criticism makes it more likely that adolescents will initiate or continue substance use. On the other hand, regular communication of parental warmth and affection, support for child competencies, presentation of clear prosocial expectations, monitoring of children, and consistent and moderate discipline can inhibit problem behaviour in children.

While the quality and level of family communication generally is important, so too is communication within the family about substance use. In many cases, parents are embarrassed about raising these issues, or are unsure of their legitimacy, as outlined

above, and hence even if they think that they have effectively raised these issues with their children, often the children have not noticed this and do not think that their parents have talked to them. It is a good idea for parents to ask children what they want in terms of information and mode of communication. Fathers are particularly bad at communicating on these topics with their children. Lessons can be drawn from the smoking literature here, where the timing of smoking-specific communication seems to be important: if parents initiate smoking-specific communication before the child has experimented with smoking, this is more likely to be effective; if they wait until after the child has started, more frequent parental communication about smoking is associated with more smoking. Another lesson, reiterating the points above about parental style, is that the better the quality of parent–child communication, the less likely are adolescents to smoke. The implication is that merely talking frequently to a child about future substance use is less important than whether or not these discussions take place in a constructive and respectful manner, and whether or not the child appreciates it. Similarly, parental disapproval of a behaviour has a preventative effect (again, as long as it is done using a positive parenting style). It is important that such disapproval is maintained: adolescents who perceive their parents becoming more lenient over time about smoking were significantly more likely to progress to becoming established smokers. It seems to be the case that open parent–child communication about alcohol and drug use and clear guidelines for use (or non-use) appear to be some deterrent for alcohol use among adolescents.

Parental supervision or monitoring of children (ie knowing where children are and what they are doing) is hugely important in preventing or delaying the onset of youthful substance use. Supervision leads to a very significantly delayed onset, often measurable in terms of years. Higher levels of monitoring have been shown to protect children against use and misuse, even when exposed to peers who used a variety of drugs. Parental monitoring and supervision is related both cross-sectionally and longitudinally to adolescents' alcohol use, and monitoring prevents adolescents who have commenced drinking from drinking more heavily (although monitoring has a stronger effect on boys than on girls). The ESPAD study in both UK and France showed that parental knowledge of the whereabouts of their offspring on Saturday evenings was the strongest factor, in both countries, predicting heavier substance use across all of their substance use variables (amount of alcohol consumption in the past

30 days, amount of alcohol consumption in the past year, binge drinking, number of times drunk, amount of cigarette smoking in the past 30 days, use of cannabis, use of other drugs). The influence of parental supervision may be direct, in that it keeps children away from substances, or indirect in that it reduces a child's contact with substance-using peers.

It is also the case that parental modelling is a major influence: children often do what parents do, not what they say. However, many of the effects outlined above hold true despite parental modelling of behaviour that they do not wish their children to follow. Hence the association of parental antismoking actions with reduced smoking in their adolescents was found for children of both smoking and non-smoking parents, as was the effectiveness of restricting the watching of R-rated films, as was the effect of parental disapproval of smoking, which was stronger and more robust than the effect of parent smoking. Nevertheless, adolescents with both parents smoking have the highest smoking risk compared with those with one or neither parent smoking, and having even one parent who smokes, substantially increases the risk that children will become daily smokers, relative to families where neither parent smokes. Similar findings have emerged for alcohol: parent modelling of alcohol use is strongly related to greater adolescent alcohol use. And in the alcohol arena, as opposed to smoking, there is an indication that the observed, actual frequency of parental drinking is more important than parents' attitudes and norms for drinking, reinforcing the idea that it is parental modelling rather than a transfer of drinking norms that is important. The most likely process being followed is that children observe parental drinking and from that, learn their parental norms about expected adult drinking. They then internalise these norms and they come into operation when the adolescent subsequently starts to drink.

However, despite the research evidence, parents do not have a strong sense of the importance of parental influence and modelling of behaviour on subsequent behaviour in their children. It would seem to be of primary importance to educate parents of the importance of their own behaviour in influencing young people's use of alcohol, and suggests the need for public health interventions that inform parents of young children that their own substance use behaviour increases their children's chances of their own future use.

Although most research into the family concentrates on parental or whole family variables, siblings are important too. Research has shown that older siblings' *willingness* to use substances, and their *actual* substance use, are both robust predictors of their younger sibling's later use, even after controlling for membership in a shared peer group and for parental 'alcoholism'. It is also the case that older siblings' substance use is also a robust predictor of peer substance use, and that low older sibling willingness to use substances is associated with less evidence of peer influence. Some research suggests that both older sibling and peer modelling / substance use are more strongly related to adolescent substance use than parental alcohol use. However, older sibling influence is stronger among sibling pairs who are of the same gender, closer in age, and from higher conflict families. There is also a reciprocal influence, where younger siblings influence their older ones, although these effects are significant only for sibling pairs close in age.

It seems clear that

- parenting style (a balance between the two dimensions of 'care' and control' (Barnes et al, 2000), where 'care' includes parental support, nurturance, attachment, acceptance, cohesion, and love; and 'control' includes parental discipline, punishment, supervision, and monitoring); this balance means being responsive, expecting a lot from their children, but also being authoritative (as opposed to permissive, authoritarian, or indifferent),
- the utilisation of rules and consequences, where having clear alcohol-specific rules is related to a later age of starting to drink,
- clear and open communication of both expectations about alcohol use (or non-use) and potential disapproval if expectations are not met,
- parental warmth,
- parental self efficacy,
- parental supervision or monitoring,
- spending significant time together as a family,
- parental modelling of the behaviours expected of or wished for from their children,
- parental control of early drinking experiences,
- and sibling's (lack of) willingness to drink and actual drinking,

are all vital areas.

These family factors which are protective of children in terms of their age of initiation into and development of behaviour towards alcohol, are also found in more general reviews of the influence of resilience and protective factors. Harrop et al (2006) showed that family-level protective factors have been consistently found across a wide range of reviews of different outcomes, including "*psychological adjustment, educational resilience, delinquent behaviour and pro-social development, aggression, anxiety and depression, allostatic load, family functioning and child development, the absence of significant delays or learning and behaviour problems, the mastery of developmental tasks and psychosocial stages. The identified protective factors seemed to fall into the following categorisations: Supportive environments (e.g. parent-child attachments, intra-familial relations, kinship networks), family practices (e.g. parenting approaches, norms and values) and resources. Again, these groups should be thought of as overlapping and interrelated rather than distinct*" (p 76).

Indirect family influences

As well as these areas of direct influence reviewed above, the family has indirect influences. Some key demographic factors which can be related to the family include academic achievement (of both parents and young people), poor social coping skills, age of first use, and previous use of other substances.

Academic achievement: Poor academic achievement and low educational aspirations are associated with substance using behaviour (NIDA, 1997; Mills and Noyes, 1984; SAMHSA, 2006) and alcohol use and alcohol use-related problems (Crum et al, 2005, SAMHSA, 2006) in adolescents and with alcohol problems in middle age (Crum et al, 2006), and high school dropouts in the USA are much more likely to be substance misusers than other young people (Johnson et al, 1988). For example, SAMHSA (2006) estimate that 72.5 per cent of students aged 12–17 who did not use alcohol in the past month reported an A or B average in their last semester or grading period compared with 67.1 per cent of those who used but did not binge on alcohol, and 57.7 per cent of those who binged on alcohol in the past month.

Level of *parental* education has been found to be inversely related to adolescent substance use, when controlled for gender, ethnicity and family structure. Higher levels of parental education are positively related to parental support, higher self-esteem, perceived control, and inversely related to a range of negative life-events (Wills et al, 1995). Lower socio-economic status, often coupled with lower levels of education, has been associated with greater drug use (Johnson et al, 1990; Dawkins, 1988; Thompson and Simmons-Cooper, 1988; Gibbs, 1984). In addition, family bonding has a relatively strong positive association with educational commitment, and adolescents with a higher educational commitment tend to drink less often and use smaller amounts (Bahr et al, 1995).

These findings are robust and have been shown in all areas of alcohol use, smoking and drug use. Bachman et al (2008) have recently summarised the evidence showing that adolescents who do well in school are less likely to smoke, drink or take drugs, as well as reporting their own longitudinal results: they tracked a national sample of more than 3,000 young people over an eight-year interval extending from ages 13–14, through to young adulthood (average age 22). This is a period when some young people drop out of school, others complete, and many go on to college. It is also a period when many experiment with cigarettes, alcohol, and illicit drugs, and some become regular users. Their data also provides an answer to the question as to which comes first: drug use or school failure? They have found that patterns of educational success or failure are well established for most adolescents in the USA by the time they reach the end of eighth grade (aged 13–14), while drug use has only begun to emerge by that time. Their findings suggest that when more opportunities for substance use do emerge, students already doing well in school are less likely to engage in such behaviours, whereas those doing poorly are more likely to do so. In fact they show that 'grade point averages' at the end of eighth grade are strongly linked to smoking at that time, and strongly predictive of later smoking. Practically none of the students with an A average were daily smokers at age 14, versus more than a quarter of the students with grades of D or lower. By age 22, half of those who had been D students had become daily smokers, compared with about a quarter of those who had been A students in eighth grade.

Bachman et al (2008) found that the strongest and most long-lasting effects of early educational success or failure were on cigarette use, not on drinking or illicit drug use. They found that smoking rates are also strongly linked with later educational attainment (as well as to attainment at age 13–14). By age 22, half of all high school dropouts were daily smokers, compared with only one in five of those with three or more years of college. Other research from this team shows that even as late as age 40, adults with three or more years of college were about one third as likely to be daily smokers as those with only a high school diploma. Their results demonstrate that the more educationally successful a young person is at age 22, the less likely he or she was, or is, or will become, a regular smoker. They report that this pattern of findings is robust across three sets of cohorts spanning ages 14 to 40 and covering the last quarter century – a period during which overall smoking rates changed and levels of educational attainment rose substantially.

The findings for alcohol use, and occasional heavy drinking, showed a somewhat different pattern. Like cigarette use, alcohol use emerges fairly early. It involves larger proportions of adolescents, but usually far less intensive use (smokers very quickly get to daily use, and often much more frequent than that). However, they found that, at ages 14 and 16, drinking is most likely among students not doing well in school. However, they also found that by age 20, the college students had surpassed their less-educated age-mates in their use of alcohol, especially in occasions of heavy drinking. They found that heavy drinking by college students is clearly linked to their lifestyle while in college. College students are more likely to live away from their parents' homes, and they are also more likely to delay getting married and having children than those the same age who are not in college. However, they also have shown that use in these college years does not itself predict use after college: they found that by the time students reach their 30s, college-educated adults have become slightly less likely than average to drink heavily.

Bachman et al (2008) conclude that adolescents who have not made a very good adjustment to school are disposed to become involved in a variety of problem behaviours, including delinquency, smoking, drinking, and illicit drug use. They argue that educational failure tends to come early in the sequence of problem behaviours, followed by adolescent delinquency, smoking, drinking, and illicit drug

use. In some ways (and in general), substance use appears to be largely a symptom, rather than a cause, of poor academic adjustment.

Poor social coping skills: Increased risk of alcohol and drug use has been associated with poor social coping skills, inappropriately shy or aggressive classroom behaviour, affiliation with deviant peers, perception of approval for drug use (NIDA, 1997), and general antisocial behaviour (e. Hawkins, Lishner, and Catalano, 1987; Jessor and Jessor, 1977).

Age of first use: Age of initiation of alcohol use is important for many reasons. First, research in the USA has found that the earlier the age at which people begin drinking, the more likely they are to become alcohol dependent later in life (Grant and Dawson, 1997). In fact, Grant and Dawson (1997) showed that young people in the USA who begin drinking before the age of 15 are four times more likely to become alcohol dependent than those who wait until they are 21. Among persons over 21 admitted for treatment for alcohol dependence in 2002, 88 per cent first became intoxicated when they were under 21 (SAMHSA, 2005).

Second, those who begin drinking in their teenage years are also more likely to experience alcohol-related unintentional injuries (such as motor vehicle injuries, falls, burns, drowning), as well being involved in alcohol-related violence, than those who begin drinking at a later age (Hingson et al. 2000, 2001). According to the US Center for Disease Control and Prevention, more than 4,000 young people under 21 die in the USA from alcohol-related causes each year (Midanik et al, 2004).

Age of first use is a strong predictor for regular alcohol, tobacco, and marijuana use, and the age at which experimentation begins is decreasing. In the USA, school-based surveys show that, in 2003, by 8th grade (13–14 years) more than 30 per cent of children had used an illicit drug or a volatile substance[3] (this is a marked reduction from the peak of 1996, where almost 40 per cent reported such use) (Johnston et al, 2003). Similar findings have emerged in the UK, with 12 per cent of pupils aged 12–15 having used drugs in the last month and 20 per cent in the last year, although in the

[3] Volatile substances include glue, gas, aerosols or other solvents

UK, figures are rising not falling. Cannabis is by far the most likely drug to have been tried, with up to19 per cent of 14–15-yearolds reporting having taken it, and up to 14 per cent of 14–15-year-olds have mixed drugs and alcohol 'on the same occasion' (SHEU, 2007).

In terms of alcohol use in the UK, latest figures from the Schools Health Education Unit (SHEU, 2007) show that up to 10 per cent (8 per cent) of 10–11-year-olds, up to 19 per cent of the 12–13-year-olds, and up to 37 per cent of the 14–15 year olds had consumed at least one of the listed alcoholic drinks during the previous week. 14 per cent of 14–15-year-old males drank more than 10 units of alcohol 'in the previous week' and 9 per cent of 14–15-year-old males drank on 3 days or more 'last week'; 23 per cent of 14–15-year-old females, compared with 20 per cent of the same age males, got drunk ‘during the last 7 days’. Of those who drink at home, up to 38 per cent do so with their parents always knowing about it. Bellis et al (2007) in their analysis of questionnaire result from 10,271 schoolchildren aged 15–16, in North West England, found that 87.9 per cent of their respondents drank alcohol, and of those who drank, 38.0 per cent usually binged when drinking, 24.4 per cent were frequent drinkers and 49.8 per cent drank in public spaces.

In the UK and elsewhere, drug use increases sharply with age: with cannabis, 1 per cent of 11-year-olds had used the drug in the last year compared to 31 per cent of 15-year-olds. Use of volatile substances among 11-year-olds is more common than the use of cannabis: 4 per cent had used volatile substances in the last year (Jeffery et al, 2002). These figures are likely to be underestimates, however, in that a general problem with school-based surveys is that they fail to account for the drug-related behaviour of young people who do not attend school. For example, the figures above ignore the 15–20 per cent of all young people in the USA who drop out of school and who are believed more likely to be substance-misusers than those who continue their education (Johnson et al, 1990).

For some young people, experimental and recreational use does not represent a long-term problem for the individual, their family, or the community. More sustained use however and, in some cases, relatively limited exposure to particular substances can lead to problems. And strong relationships have been found between early initiation

and later problematic misuse of alcohol and other drugs (eg DeWit et al, 2000; Hawkins, Catalano and Miller, 1992; Kandel, Simcha-Fagan and Davies, 1986; Kandel, 1982). Of the people in the USA who began drinking before age 14, 47 per cent became dependent at some point, compared with 9 per cent of those who began drinking at age 21 or older (Hingson et al, 2006). The adverse effects of early onset of drinking may be shorter term as well: prospective research has found a younger age of initiation to be strongly related to a higher level of alcohol misuse at ages 17 and 18 (Hawkins et al, 1997). A 20-year longitudinal study showed that early use of alcohol and cigarettes was the strongest predictor of progression to marijuana and other illicit drugs (Kandel, Yamaguchi and Chen, 1992); and early initiators of substances are also less likely to reduce their use of substances following the receipt of intervention or prevention programmes in adolescence (Andrews et al, 2003). These findings are not solely confined to Europe and the USA: Costa Rican survey data confirm the proposition that an earlier age of initiation may predict a greater likelihood of alcohol problems later in life. According to that country's 1995 national survey of substance use, 55 per cent of those identified as alcoholic and 40 per cent of those determined to be drinking excessively had begun drinking before the age of 15, compared with only 31 per cent of those drinking at lower levels (Bejarano et al, 1996; Jernigan, 2001).

Previous use: The strongest behavioural predictor of drug use has consistently been shown to be past use (NIDA, 1997; Newcomb and Bentler, 1988). Alcohol, tobacco, and marijuana use have been shown to predate use of other drugs, including each other (Collins et al, 1987; Kandel and Logan, 1984), and individuals who use greater amounts of one substance are more likely to use more of another (Duncan et al, 1995).

In summary, as would be expected, many of these factors reviewed above are interactive, and family factors prove hugely important. For example, Bahr et al (1995) showed that those with stronger bonds with other family members were then less likely to have drug-using peers, and were more likely to show a greater commitment to their education (itself correlated with a lower level of substance use). Eitle (2005) showed that a variety of variables were linked with teenagers being at an increased risk to use alcohol: lower school commitment, lower levels of parental discipline, those whose parents are less educated, and those who live in families with

a greater level of exposure to adult substance users. These results have been replicated in a number of studies. However, not all studies show that family factors predominate, certainly by the age of initiating substance use. Findings from England lend some support to the conclusion that there are complex interactions at work. Sutherland and Shepherd (2001) surveyed 4,516 English children aged 11–16, and obtained from them data in relation to their alcohol, cigarette and illicit drug use, and their contact with the police, perceived academic achievements and future expectations, religious beliefs, family structure, the importance of family versus peer opinions and suspension from school. The social factors could be ranked in the following order of importance: concurrent use of the second and third substances, having been in trouble with the police, perceived poor academic performance and low future academic expectations, a lack of religious belief, coming from a non-intact family, favouring peer over family opinion and having been suspended from school. Many of these relationships were age-sensitive with substance use peaking at age 15. The authors conclude that a constellation of behaviours are related to adolescent substance use, and hence behaviours cannot be considered in isolation, but need to be examined from an holistic or biopsychosocial standpoint. They argue that these relationships are complex as well as interrelated, implying that future research should consider not only causality of adolescent substance use, but also of the aetiology of these satellite behaviours. These issues are taken up again in a later section, on risk and protective factors.

Role of peers

Although there is such strong evidence that family factors are so important in this area, there is also strong evidence that peer relationships are a major, possibly a paramount, influence.

There is a strong association between both adolescent use of each of alcohol, smoking and drugs, and contact with similarly-using peers (Andrews et al, 2002; Ary et al, 1993; Bahr et al, 1995; Bricker et al, 2007; Duncan et al, 1995; Duncan et al, 1998). In the USA it has been known for some time that the greatest increase in the level of initial use and the developmental trajectory in use of alcohol, cigarettes and marijuana

corresponds with the opportunity for increased social contact with the transition from middle school to high school, at age 13–14 years (Duncan et al, 1995).

There is however evidence suggesting that the role of peer pressure declines with increasing age. McIntosh et al (2006) looked at the explanations that young people (aged 10–12 at first interview, interviewed annually for two years) gave as to why they experimented and then used illegal drugs. The children's accounts suggest that the role of peer pressure declines substantially as a component of drug offers as the children get older; and that the decision to experiment with drugs is increasingly a matter of personal choice. The declining role of peer pressure is explained in terms of a change in orientation among drug taking peers from 'drug trying' as a form of risk-taking to 'drug use' as an enjoyable activity. One consequence of the reduction in pressure from peers is that children feel more comfortable being in the company of other young people when they are using drugs. Although they still require the skills to deal with unwelcome offers, the study suggests that actions which influence the young person's drug-related choices are likely to be much more relevant to their needs as they get older.

Curran et al (1997) looked longitudinally over a three-year period at the relation between adolescent alcohol use and peer alcohol use, in a group of 363 adolescents whose average age at the start of the three-year project was 12.9 years, 56 per cent were children of 'alcoholics' with the remainder being control children, half were of each gender and 25 per cent were Hispanic, 75 per cent Caucasian. They found (not surprisingly, given this three-year period from 13–15) that both adolescent alcohol use and peer alcohol use grew linearly over time, and that the changes in adolescent alcohol use were closely related to changes in peer alcohol use. Interestingly they also found that if peers already used alcohol at the start of the period, this was predictive of later increases in adolescent alcohol use; and if the target adolescents already used alcohol at the start of the period, this was predictive of later increases in peer alcohol use; thus demonstrating bi-directional effects between adolescent alcohol use and peer alcohol use.

This raises the key issue of the extent that any effects of peers are due to *peer pressure* or *influence* versus *peer selection*: ie, do substance using peers *influence*

young people to take up and go on to use substances, or do young people *select peers* almost in order to enable themselves to be influenced by them. There is increasing evidence (eg Duncan et al, 1998; Bauman and Ennett, 1996; Duncan et al, 1995; Ary et al, 1993; Kandel and Andrews, 1987; Chassin et al, 1986) that both of these influences are at work. For example, Aseltine (1995) compared peer effects in middle and late adolescence with regard to both drug use and other delinquent behaviour, and found that while young people may appear to be socialised into delinquent behaviour by peers, *selection* of companions plays a major role in accounting for similarities in drug use among friends. Many researchers agree that estimates of peer influences on adolescent drug use may be grossly exaggerated if the effects of selection of friends are not adjusted for (Bauman and Ennett, 1996; Aseltine, 1995; Coggans and McKellar, 1994; Kumpfer and Turner, 1991).

Mercken et al (2007) were also interested in this bi-directionality or reciprocity, this time in terms of smoking. They were interested in disentangling these effects of social selection (do adolescents select friends because of their smoking intentions and/or their actual behaviour) and social influence (are adolescents influenced by their peers' smoking intentions and/or their actual behaviour). They used a sample of 1,886 adolescents with a mean age of 12.7 years from the Netherlands, and looked at them longitudinally, over two measurement points 12 months apart. They also added into this mix another variable: whether or not the friendships that were examined were reciprocal or non-reciprocal, where reciprocal friendships (eg each is the other's 'best friend') offer higher friendship quality, resulting in more opportunities for influence processes to cause similarity of smoking behaviour. They found that both social selection and social influence played an important role in explaining similarity of smoking behaviour among friends. Within non-reciprocal friendships, only social selection explained similarity of smoking behaviour (ie in these friendships, people selected others who matched their smoking intentions or behaviour), whereas within reciprocal friendships, both social influence and social selection explained similarity of smoking behaviour. Outside of peer influence, they also found that sibling smoking behaviour was a more important predictor of adolescent smoking behaviour than was parental smoking behaviour.

Other studies have shown that sibling behaviour had a major impact on peer influence. Pomery et al (2005) in their study of 225 African American families looked at parental, peer, and older siblings' contributions to adolescents' substance use. They found that older siblings' behavioural willingness to use substances at Time 1 predicted target adolescents' Time 2 use. They also found that the strength of the older siblings' behavioural willingness to use substances interacted with peer influence, with low sibling behavioural willingness being associated with less evidence of peer influence. Windle (2000) used data from over 570 middle adolescents also to look at parental, sibling, and peer influences on adolescent substance use and alcohol problems. He found that peer and sibling substance use were more strongly related to adolescent substance use than was parental alcohol use, and that sibling substance use was a robust-predictor of peer substance use. Although alcohol use was a significant-predictor of alcohol problems and illicit drug use, peer substance use, coping motives for drinking, and stressful life events were also statistically significant predictors of alcohol problems, over and above their influence on level of alcohol use.

Not all research shows the bi-directionality reported above. Sieving et al (2000b) were also interested in disentangling the effects of social selection and social influence: their paper was titled 'Do friendships change behaviours, or do behaviours change friendships?' They used data from 1,804 adolescents participating in Project Northland, a school- and community-based alcohol use prevention trial, across ages 12–15. They found that higher levels of friends' drug use led to increased alcohol use in the adolescent being studied, whereas the reverse-order relationship (greater adolescent involvement in alcohol leading to more drug use among friends) was not supported by these data. They also found that both participants' alcohol use and the alcohol and other drug use of friends were highly stable over time. They concluded that similarity in drinking behaviour among adolescent friends may be more related to processes of peer influence than to processes of peer selection.

Bot et al (2005) looked at 12–14-year-old adolescents, and at the effects of the best friend's drinking behaviour on their alcohol consumption. They hypothesised that friendship characteristics such as reciprocity and sociometric status differences might moderate the extent to which adolescents were influenced by their best friends, and used longitudinal data from 1,276 adolescents and their best friends to examine these

issues. They found that best friend's drinking behaviour is related to adolescent's drinking both cross-sectionally and longitudinally. Cross-sectionally, this association was particularly strong between mutual friends and friends with lower status. In longitudinal analyses, a different picture emerged. Respondents were most likely to adopt their friend's drinking behaviour when it was a unilateral friend with a higher status.

Urberg et al (1997) were also interested in the influence of 'best friends'. They showed that, over the course of a year, in a short-term, longitudinal study of 1,028 students aged 11–12, 13–14 and 15–16, closest friends had a moderate amount of influence on the initiation of both alcohol consumption and cigarette consumption. However, they found that it was only the use of the friendship group which predicted transition into current cigarette use, whereas it was only the use by the closest friend which predicted transition into current alcohol use, although both group and close friend independently contributed to the prediction of adolescents' drinking to intoxication. They found no difference in the amount of influence between stable and unstable close friendships or friendship groups, nor was age/grade nor gender related to the amount of influence. Interestingly, they also found that much of the relationship between alcohol use and friendship seems to be explained by people actively selecting friends that might be similar, and then these friends influencing them, rather than it actually being friends exerting a really strong and independent influence.

Other have also looked at best friends. Andrews et al (2002) collected data from 294 young adults, ages 19 to 25, and both a same- and an opposite-gender best friend or mate across 3 annual assessments, and analysed them to examine the similarity to and influence of the peer on the young adult's substance use. The authors found similarity across time between both peers and the young adult in alcohol use, binge drinking, cigarette use, and, in most cases, marijuana use. In prospective analyses, peer use predicted young adult cigarette use, binge drinking, and problem alcohol use by the young adults. Results were generally consistent across gender and for both same- and opposite-gender peers.

Bricker et al (2007) were specifically interested in the extent to which same-age and older schoolmates' smoking and non-smoking are associated with adolescents' smoking transitions, where adolescents' smoking transitions were assessed at three grade intervals: 5th−7th (age 10–12), 7th−9th (age 12–14) and 9th−12th (age 14–17). Smoking questionnaire data were gathered on a cohort of adolescents (4,354 for same-age schoolmate analysis, and 1,833 for older schoolmate analysis). They found no significant evidence that same-age schoolmates' smoking or non-smoking was associated with any of the adolescent smoking transitions at any of the three grade intervals. In contrast, older schoolmates did have a significant effect. With each older schoolmate who smoked, the probability of the adolescent making the transition to trying smoking rose by 1 per cent and the probability of the adolescent making the transition from trying smoking to monthly smoking also rose by 1 per cent (during the 7th−9th grade (age 12–14) interval). Older schoolmates also had an effect in the opposite direction: each older schoolmate who did not smoke was associated with a 1 per cent probability of an adolescent not trying smoking or not escalating from trying smoking to monthly smoking, at several grade intervals.

Ennett et al (2006) examined the peer context of adolescent substance use by undertaking a social network analysis, measuring three types of attribute which peer networks have: social embeddedness, social status, and social proximity to substance users. Their data came from 5,104 sixth, seventh, and eighth graders (11–12, 12–13, 13–14), surveyed every 6 months for five assessments. They found that adolescents who were less embedded in the network, with greater status, and with closer social proximity to peer substance users, were more likely to use substances. They also found that adolescents in less dense networks and networks with higher smoking prevalence were more likely to smoke and use marijuana. They concluded that having friends in the network, being liked but not too well liked, and having fewer friends who use substances is the most likely to protect from early substance use.

Engels et al (2006) were interested in whether substance use might be helpful to adolescents by having a positive impact on friendships and intimate relationships. Certainly, Coleman and Cater (2005) in their qualitative study looking at the reasons why underage young people (aged 14–17) get drunk, found that getting drunk was widely seen as normal and acceptable, and that the respect and image associated with

getting drunk was an important motivating factor. These young people reported the important influence of friends, ranging from actual peer pressure to the less overt, although more common, 'peer guidance'.

A problem in researching this area, however, is that information on this type of social functioning is usually based on adolescents' self-reports, which might not present the most factual account of their social functioning. Engels et al (2006) therefore collected data about 3,361 early and mid-adolescents at secondary schools in the Netherlands. All respondents were asked to evaluate all classmates on measures of social behaviour and psychological traits, such as sociability, self-confidence, achievement, withdrawal, and aggression. Analyses clearly showed that highest levels of smoking and drinking were found in adolescents who scored highest on sociability and self-confidence, and relatively low on aggression-inattentiveness, achievement-withdrawal, and emotionality-nervousness. This suggests that beneficial functions of substance use are not only in the eyes of the beholder, at least not in that of the individual drinker or smoker. The conclusion from this research is that it IS the cool kids who smoke and drink most! (certainly in the Netherlands). That could probably explain why kids follow them!

Most studies of peers confine themselves to friendship relationships, but many young people drink alcohol in order to boost their confidence with the opposite sex (Coleman and Cater, 2005). This is sometimes termed 'Dutch courage', so it is fitting that a study from Holland looked at this. Engels and Knibbe (2000) used data from a longitudinal study of 1,063 adolescents to investigate whether alcohol use was a precursor of the development of a partnership and whether adolescents tended to change their drinking habits once they became involved in a steady relationship. They found that, as expected, young people (of both genders) who consumed alcohol at the ages of 14 and 15 were more likely to be involved in an intimate relationship 3 years later, with drinking in social settings being particularly likely to be associated with having a partner 3 years later. They also found that young men involved in a steady relationship were more likely to show increased consumption at home. For females, the differences in changes in consumption between the partnership categories were in most cases not significant.

Similarly (although not from longitudinal study), Coleman and Cater (2005) in their study looking at the reasons why underage young people (aged 14–17) get drunk, undertook 64 in-depth interviews with young people reporting experiences of 'risky' drinking, or getting drunk in unsupervised, often outdoor settings. They found that the most frequently cited motivation for this drinking was to increase confidence in social and sexual situations.

In summary, many of these studies described above provide contradictory results, and there does not appear to be the consensus over peer influence that there is over parental, sibling and family influence. Further, in many of these studies, the size of the effects of peer influence is not high. This suggests that selection may account for much of the similarity in substance use between adolescent friends. This modest influence effect suggests that prevention programmes that focus only on peer resistance skills may not be sufficient. It is possible that certain adolescents seek out and select substance-using peers, and if this is the case, prevention programming must use different programming for these adolescents. These issues will be returned to in a later section, when the differential effects of these various potential influences of children's learning and behaviour towards alcohol are examined.

Media and alcohol marketing

If we are interested in understanding how children learn about alcohol, and how this learning influences their knowledge, attitudes and subsequent behaviour, we need to look beyond the influence of the family and the peer group, towards the part that the media and marketing play. Media and advertising images, and stories about celebrities and others drinking and taking drugs, help define how society views alcohol and other substance use; and as we saw at the start of this review, such socialisation processes are of major importance in defining attitudes and future behaviour.

It is clear that there is a major impact on young people's attitudes and behaviour towards alcohol from both media (film, music, magazines, etc) and advertising and marketing. The Independent Advisory Group on Sexual Health and HIV (IAG, 2007) in their recent report on *Sex, Drugs, Alcohol and Young People* stated that

- The positive media coverage of 'celebrity' behaviour involving sex, drugs and alcohol acts as an encouragement to young people.
- Alcohol advertising is widely accessible to all who can read. Merchandising for alcohol manufacturers' sponsorships are available to small children.
- Some alcohol advertising is targeting young people.

The recently published UNICEF report (2007) records that out of 21 countries, the United Kingdom is at the bottom of the league table for child well-being, and that children in the UK had the highest incidence of risk-taking behaviour: more have had sexual intercourse by the age of 15 than in any other country, more have been drunk two or more times aged 11, 13 and 15 than in any other country, and they are the third highest users of cannabis. UNICEF is not the only international body which is becoming concerned about the UK's youth alcohol problem, and the impact that marketing is having on it. The European Commission's *Report on Alcohol* (Anderson and Baumberg, 2006) and the World Health Organization's *Global Status Report: Alcohol and Young People* (Jernigan, 2001) present considerable evidence which informs the debate about the impact of alcohol advertising on both attitudes and subsequent behaviour – alcohol consumption.

Research commissioned by the Advertising Standards Authority (MORI, 2005) shows that, in the UK alone, more than £200 million was spent on alcohol advertising in 2004. The trend at that time was for a 2.5 per cent rise, year on year, implying that by 2007 almost £220 million per year was being spent, rising to almost £230 million per year by 2009 . MORI (2005) also estimated that additional promotion and marketing budgets are worth more than three times that figure, in the UK alone. For example, drinks brands are being increasingly promoted through sponsorship of sports and music events, many of which appeal to young people. The size of these figures are replicated in many other countries. The Dutch alcohol industry invested 100 million euros on direct advertising in 2001, an increase of some 38 million since 1995 (van Dalen, 2003). In the USA, even twelve years ago (figures from 1997), more than one billion dollars was spent on alcohol advertising each year in the USA alone (Snyder et al, 2000). The USA figures have risen even more steeply than the UK and European ones: from 2001 to 2005, alcohol companies spent $4.7 billion to place 1.4 million

advertisements for alcoholic beverages on television alone (CAMY, 2006). The amount spent on televised alcohol ads rose by 32 per cent from 2001 to 2005, and the number of alcohol ads on television rose by 34 per cent. By 2003, alcohol companies in the USA were spending nearly two billion dollars per year on what they term 'measured media' (ie direct advertising) (Kessler, 2005), and the US Federal Trade Commission has estimated (Kessler, 2005; Casswell and Maxwell, 2005) that these alcohol companies spend two to three times this amount each year on unmeasured marketing activities (such as product development, sponsorship of sports and entertainment events, point of purchase promotions, product placements in movies and on television, spring break and campus marketing, and so on).

These expenditure figures for individual countries, although huge, would pale almost into insignificance if the global amounts spent on advertising and marketing were to be brought together.

Issues related to both direct advertising and indirect marketing and their influence on young people's drinking and attitudes towards drinking have recently been reviewed by Anderson (2009), Anderson and Baumberg (2006), Hastings (et al, 2005; Hastings 2007), Jernigan (2001) and Martin et al (2002), and this section of the review has utilised many of their findings. The main findings from all of these reviews, however, are that well-designed longitudinal studies have shown that the advertising and marketing of alcohol are significant factors in the rise in consumption of alcohol by young people. Not surprisingly, young people who see, hear and read more alcohol advertisements and endorsements are more likely to drink and to drink more heavily than their peers.

Advertising and 'direct' marketing

Looking first at advertising and 'direct' marketing, both the alcohol and the advertising industries argue that advertising leads to 'brand switching' and not to new consumers. Snyder et al (2006) showed that this was not the case. They looked specifically at links which existed between adverts for alcohol and levels of drinking among young people, and showed that young adults and teenagers drink more under the influence of advertising for alcoholic beverages. They interviewed their random sample of 1,872 young people (aged 15–26 years) four times between 1999 and 2001,

about their drinking behaviour and exposure to alcohol advertising. The researchers also noted alcohol advertising expenditures (within respondents' regions) on television, radio, billboards, and newspapers. They also took into account total alcohol sales. They showed that: 1. *for each additional alcohol advertisement viewed per month, there followed a 1 per cent rise in the average number of drinks consumed by respondents*; 2. young drinkers (even those under the legal drinking age of 21) *in regions with greater alcohol advertising expenditures drank more than those in regions with less expansive advertising*; 3. *each additional dollar spent per capita raised the number of drinks consumed by 3per cent*; 4. in markets with *heavy alcohol advertising of more than $10 per capita per month, alcohol consumption increased over time and reached a peak of 50 drinks per month by age 25*. These findings indicate that alcohol advertising contributes to increased drinking among young people – undermining the notion that advertising only leads to brand switching.

Since the research undertaken for that study (1999–2001) there has been a very large increase in the amount of advertising on both TV (CAMY, 2006) and radio (CAMY, 2007). As outlined above, from 2001 to 2005, alcohol companies spent $4.7 billion to place 1.4 million advertisements for alcoholic beverages on television in the USA. This was a 32 per cent increase in spending on televised alcohol ads and a 34 per cent increase in the number of alcohol ads on television over these 4 years (CAMY, 2006). CAMY (2006) has calculated that young people (aged 12 to 20) increased their exposure to alcohol adverts by 41 per cent. A similar set of findings has occurred for radio (which, despite competition from iPods, instant messaging and the Internet, remains a popular medium among youth: in 2005 in the USA, radio was second only to television as the medium of choice for 8- to 18-year-olds; radio is the media appliance 8- to 18-year-olds are most likely to have in their bedrooms, and 12- to 17-year-olds are still the most likely group to be listening during the 7pm–midnight period (CAMY, 2006)). There were 337,602 alcohol advertisements placed on stations in 28 of the largest radio markets in the United States in 2006. More than a third of them were placed on programmes that young people aged 12–20 were more likely to hear, on a per capita basis.

Such advertising is not only so pervasive in the USA. Alcohol Concern (2007b) has shown that most alcohol adverts appear before the 9pm watershed and in programmes

here large numbers of children are viewers. Many adverts are shown from 3pm to 5pm, coinciding with the time when most children return from school; and alcohol adverts were shown during a number of programmes where a significant share of the audience included children, including 'Home and Away' and 'The X-Factor'. In some popular soap programmes such as 'Coronation Street', there are likely to be more than one million children watching the programme. Although the programme may not be judged as likely to appeal to children, the large numbers of children viewing is of great concern. At the time of this Alcohol Concern study, 11 per cent of the audience was shown to be between four and 19 years old – representing 1,126,000 young people.

It is clear, then, that alcohol advertising has a significant effect (Snyder et al, 2006) and is continuing to rise (CAMY, 2006, 2007). How does alcohol advertising have this effect? Content analyses of the appeals used in alcohol advertisements suggest that drinking is portrayed as being an important part of sociability, physical attractiveness, masculinity (or femininity, if the adverts are aimed at females), romance, relaxation and adventure (Martin et al, 2002; Madden and Grube, 1994; Grube, 1993; Finn and Strickland, 1982). Many alcohol advertisements use rock music, animation, image appeals, and celebrity endorsers, which increase their popularity with underage television viewers (Aitken, 1989; Grube, 1993; Jones and Donovan, 2001; Martin et al, 2002; Waiters et al, 2001). Not surprisingly, then, alcohol commercials are among the most likely to be remembered by teenagers and the most frequently mentioned as their favourites (Aitken, 1989; Aitken et al, 1988a; Aitken et al, 1988b; Grube, 1993).

The work by Grube over a number of years (Grube, 1993; Grube and Wallack, 1994; Grube 2004; Grube and Waiters, 2005) makes a particularly important link between children's awareness of alcohol advertising and their knowledge of alcohol. Grube found that children who were more aware of advertising had increased knowledge about beer brands and were more likely to view alcohol positively. In one study of 213 children aged 7 to 12 years, the more the children liked alcohol advertisements, the more likely they were to have experimented with alcohol (Austin and Nach-Ferguson, 1995). Similarly, Collins et al (2003) looked at awareness of beer adverts in a group of 1,530 13–14 year olds, finding that adolescents with greater exposure to

advertisements in magazines, at sporting and music events and on television were more 'advertisement aware' than those with less exposure, as were teens who watch more TV, pay attention to beer advertisements and know adults who drink. Beer advertisement awareness was dramatically higher among boys, and was associated with drinking only among boys.

Again, this work is not confined to the USA. Work in the UK many years ago (Aitken et al, 1988b) demonstrated that young people are increasingly adept at interpreting the cultural messages contained in alcohol advertisements. In that work, 88 per cent of 10- to 13-year-olds and 96 per cent of 14- to 17-year-olds were aware of alcohol advertising, 76 per cent of these could identify three or more advertisements when the brand name was masked, and young people, even 10- to 12-year-olds were adept at interpreting the messages, images and targeting of alcohol advertisements, in the same way as adults. On the basis of this and much other work, Hastings et al (2005, p 303) concluded:

> "*In essence, the more aware, familiar and appreciative young people are of alcohol the more likely they are to drink both now and in the future.*"

Chen and Grube (2001), in Martin et al (2002), showed that children (they examined children from age 10 upwards) and adolescents are exposed to alcohol advertising and that they find some of it very appealing. Liking of specific elements (people, story, and humour) were the strongest predictors of overall liking of alcohol advertisements. Liking of alcohol advertising directly predicted current drinking levels and had significant indirect effects on drinking and future intentions to drink that were mediated through positive expectancies and normative beliefs. These findings suggest that alcohol advertising may have small but significant effects on young people and may predispose them to drink. In order to stop this, it would be helpful if alcohol advertisers would avoid actors, stories, and humour that are especially appealing to young people, and avoid placing adverts in media that young people consume. Unfortunately, the evidence (refs) is that alcohol advertisers in fact do precisely the opposite!

These results corresponds to some of the findings from Hastings et al (2007, cited in Duffy, 2007) recent UK study into the effect of advertising on underage drinking,

where he found that 13- and 14-year-olds had revealed that they preferred to drink certain brands over others – for instance, the alcopop WKD was viewed as 'cooler' than Bacardi Breezer. As Hastings was quoted as saying in a recent newspaper story on this topic in the Scottish Sunday Herald (Duffy, 2007), "*Children are full of comments on brands; they know that Carling sponsor Celtic and Rangers and make comments on everybody knowing what Carling is*".

Grube and other colleagues have continued this line of research. Austin et al (2006) looked at the role of desirability, identification and scepticism as mediators of how alcohol advertising influences underage drinking. They got 653 young people aged 9–17 to undertake computer-assisted, self-administered interviews on this topic. They found that individuals progressively internalise advertising messages, and then later employ them in eventual decisions about behavioural choices. Desirability of media portrayals of alcohol use predicted the desire to emulate those portrayals (they called this identification), which predicted liking of beer brands and positive alcohol expectancies. There was no significant relation between scepticism (ie, the level of agreement shown with statements such as "Alcohol ads make drinking seem better than it really is" and "Companies that make ads want me to buy things that I don't really need") and alcohol use, implying that being sceptical about adverts and understanding what they are trying to achieve does not protect against their effects.

However, and related to the previous discussion on parental influence, parental guidance of television viewing affected scepticism and desirability as well as positive alcohol expectancies, all in beneficial ways. Parental guidance also directly and negatively affected youths' decisions to choose beer-themed items and to drink alcohol. As the authors suggest, these findings strongly suggest that parents can help counter media effects and influence children's alcohol expectancies by teaching them to improve their information processing and critical skills. Efforts to strengthen this pattern of influence may be more effective and longer lasting than edicts, given that youth are increasingly becoming responsible for their own decisions and may be less responsive to orders given by authority figures.

In summary, for many years now studies have found that there is a major relationship between 'naturalistic exposure' to alcohol advertising and the

consumption of alcohol. There are significant positive relationships between young people's exposure and attention to alcohol advertisements (on television and in magazines) and their drinking behaviour. There are also strong age effects: a qualitative study in the UK (Aitken et al, 1988a, b) on the perceptions of, and responses to, alcohol advertisements by 10–16-year-olds found that familiarity with, and appreciation of, alcohol advertisements increased rapidly between 10 and 14: 15–16-year-olds both enjoyed them and were adept at deducing from them complex symbolism and imagery (such as masculinity, sociability and working class values). They also found differences between underage drinkers and non-drinkers, with the drinkers enjoying alcohol advertising more and being significantly better at recognising the brand imagery contained within it.

These findings were replicated more recently in a quantitative study by Austin and Knaus (2000) who surveyed 273 children in Washington State in the USA, using a 'predrinking behaviour index' as an outcome to assess media effects on precursors to drinking among children for whom alcohol consumption is not yet occurring. It also examined age trends in relevant beliefs and behaviours. They found that perceptions of advertising desirability and the extent to which it seemed appealing, increased steadily from children aged 8 to children aged 15, whereas identification with portrayals (the degree to which individuals wanted to emulate portrayals) levelled off after age 11–12. Positive expectancies (positive social benefits perceived to be associated with drinking alcohol), also increased with age, particularly between ages 11 and 15. When demographics and age were controlled, desirability predicted identification, and both predicted expectancies. Expectancies correlated with alcohol predrinking behaviour, and expectancies predicted risky behaviour. Predrinking behaviour and reported risky behaviour were correlated. The results again provide cross-sectional support for the view that beliefs and desires developing by age 8–9 prime children for future decisions regarding alcohol use.

Many of these studies are clear that advertising encourages a desire to drink in young and growing teenagers. Both Aitken et al (1988a, b) and Wyllie et al (1998, who surveyed 500 New Zealand 10–17-year-olds and found that the degree to which the children liked a set of beer advertisements influenced how much they expected to drink at age 20) argue that their data support the hypothesis that positive responses to

advertisements increased the frequency of current drinking and expected future drinking, and both argue that they found no support for the reciprocal hypothesis – that drinking might generate positive attitudes to alcohol advertising. However, examining the impact, if any, of alcohol advertising on the onset of drinking really requires longitudinal research.

Hastings et al (2005: page 303) in a review of longitudinal studies conclude that,

> "*Overall, consumer studies – especially the more sophisticated recent ones – do suggest a link between advertising and young people's drinking. In essence, the more aware, familiar and appreciative young people are of alcohol advertising, the more likely they are to drink both now and in the future. Following up young participants who report high levels of exposure to alcohol advertisements, but who did not yet drink, has shown that they are more likely to do so in the future*."

Hence Grube and Wallack (1994) showed (in the USA) that level of awareness of beer advertising is linked to greater knowledge of beer brands and slogans, increasingly positive beliefs about drinking and higher intentions to drink as an adult; Connolly et al (1994) showed that young men who had a higher recall of alcohol advertising at the age of 15 consumed larger volumes of beer at the age of 18 (and although they found no effects linking advertising with wine or distilled spirits consumption, and negative relationships between women's recall of alcohol portrayed in the media and their beer consumption, it is the case that most of the adverts viewed were for beer, and were aimed at males); Casswell and Zhang (1998) found a significant relationship between beer brand allegiance and liking of alcohol advertisements at age 18, with beer consumption at the age of 21, and that liking for advertising at age 18 did not appear to influence consumption at age 18, but brand allegiance did. Ellickson et al. (2005) followed over 3,000 13–15-year-olds in the USA for three years, comparing drinkers and non-drinkers at baseline, and showing that exposure to in-store beer displays predicted drinking onset for non-drinkers after two years, and exposure to advertising in magazines and beer concession stands at sports or music events predicted frequency of drinking after two years. Stacy et al (2004), who followed up a cohort of 2,250 12–13-year-olds and, using a combination of exposure and recall variables, found effects for television advertising, showing that

an increase in viewing television programmes containing alcohol commercials was associated with a 44 per cent increased risk of beer use, a 34 per cent increased risk of wine or liquor use and a 26 per cent increased risk of engaging in three-drink episodes a year later.

Evidence for the effects of advertising also come from international and economic modelling studies. It is known that countries with partial restrictions on advertising have lower alcohol consumption rates and lower motor vehicle fatality rates than do countries with no restrictions, and countries with complete bans on television alcohol advertisements have even lower alcohol consumption rates and motor vehicle fatalities rates than do countries with partial restrictions (Saffer, 1991, 1993). It is more difficult to use these methods to examine alcohol usage in young people, but Saffer and Dave (2003) suggest that, among 12 to 16-year-olds in the USA, their econometric analyses of the elasticity of advertising expenditure with respect to past month alcohol use and past month binge participation showed that the complete elimination of alcohol advertising could reduce adolescent monthly alcohol use by about 24 per cent and binge participation by about 42 per cent. The size of the effect was similar to a doubling of the price of alcohol, which was estimated to reduce adolescent monthly alcohol use by 28 per cent, and binge drinking by 51 per cent. In a later study (Saffer and Dave, 2006) they estimate that a partial reduction in alcohol advertising would still have effects, although not such striking ones: they estimated that 28 per cent reduction in alcohol advertising would reduce the percentage of adolescents who drink monthly from 25 per cent to between 24 per cent and 21 per cent and the percentage who engage in binge drinking monthly would fall from 12 per cent to between 11 per cent and 8 per cent.

All of this is backed up by members of the advertising profession themselves: one key informants study (Thomson et al, 1991, cited by Hastings et al, 2005) carried out in New Zealand, where the participants included advertising agency creative directors, market researchers and communication/education experts, showed that 69 per cent of them believed that alcohol advertising on television and radio would encourage 13–17-year-olds to drink.

These conclusions are also backed up by the evidence from smoking initiation, where it has been accepted for some time that advertising is associated with cigarette use. One systematic review of nine longitudinal studies that followed up a total of over 12,000 baseline non-smokers found that exposure to tobacco advertising and promotion was associated with the likelihood that adolescents will start to smoke (Lovato et al, 2004). Based on a number of factors (the strength of these associations, the consistency of findings across numerous observational studies, the temporality of exposure and smoking behaviours observed, as well as the theoretical plausibility regarding the impact of advertising), the review concluded that tobacco advertising and promotion increases the likelihood that adolescents will start to smoke.

Returning to alcohol, as Smith and Foxcroft (2007) in their review of the effect of alcohol advertising and marketing on drinking behaviour in young people concluded:

> "*The data from these studies suggest that exposure to alcohol advertising in young people influences their subsequent drinking behaviour. The effect was consistent across studies, a temporal relationship between exposure and drinking initiation was shown, and a dose response between amount of exposure and frequency of drinking was demonstrated."* (page 27). "*Data from prospective cohort studies suggest that a relationship* (exists) *between amounts of exposure to alcohol advertising or promotional activity at baseline* (and the) *amount of alcohol consumed by young people at follow-up. These findings are in agreement with positive associations reported in cross-sectional surveys"* (page 3).

Indirect Marketing

Socialisation via the media is not of course only about direct advertising: there are much more subtle forms of advertising – media representations in films, TV programmes, mentions on popular records, use of the internet, sports promotions and sponsorships, and the growing influence of 'branding' and the importance that a brand name attracts. Casswell and Maxwell (2005) have described the 'brand' as being the "*dominant feature of contemporary marketing*" (p 344), with it

> "*becoming in effect the 'real product'. This is particularly evident in youth culture, where brand affiliation has become important in the construction of self-identity. The marketer's goal is to make the brand itself an experience and*

> *lifestyle – one of a subculture's defining features. Alcohol companies have thus embedded the use of their products in the youth culture, interacting with and contributing to the construction of both local and global youth cultures. The major trans-national alcohol producers have enormous resources and are able to launch sophisticated marketing campaigns globally*" (p 344).

As outlined above, increasingly alcohol producers' spending goes not on direct advertising, but rather on 'below-the-line' expenditures that are designed to embed brand names and products in the everyday activities of the target audience. In the language of the marketers, these activities are designed to make the product an integral part of the lifestyle of the target user, and to create an intimate relationship between the user and the product. Hastings et al's 2005 review also examines these media, and concludes that:

> "*examining all these variables in isolation is likely to underestimate the power of modern marketing, where integration and strategic synchronicity are key. Just as all forms of advertising are harnessed in an 'integrated marketing communications mix,' (Hutton, 1996) so marketing communications also form just part of the overall marketing mix. There is now sufficient research evidence on the constituent elements of this marketing to say that the balance of probabilities now favours the conclusion that it is having an effect. The fact that exactly the same conclusions have been drawn for tobacco (Loyato et al, 2004) and food marketing (Hastings et al, 2003) suggests that plausibility is moving to veracity*." (Hastings et al, 2005: page 306).

Alcohol is not just directly marketed, it is done so subliminally as well, via sponsorship and product placements. Grube and Waiters (2005) showed that television, radio, film, and popular music are often potential sources through which young people may learn about alcohol and as potential influences on young people's drinking and drinking problems. The effects of alcohol portrayals and advertising on young people and targeting of youth by advertisers are particularly salient issues.

Mosher and Johnsson (2005) presented a case study of the development of 'branding' by looking at 'Flavored Alcoholic Beverages (FAB)' – better known as alcopops. They argue that such drinks, by virtue of being sweet and relatively low alcohol

content, are designed for 'entry-level' drinkers. Research has shown that they are popular with underage drinkers, particularly teenage girls, and that the industry uses marketing practices that appear to target such young people. Mosher and Johnsson argue that introducing drinkers to spirits-branded FMBs creates 'brand awareness' for those spirits. They cite a spokesperson for Diageo, the company that markets Smirnoff Ice: "*It is no accident that the Smirnoff Ice bottle looks like the vodka bottle…. We've got it working on both ends (malt beverage and spirits). That's why we have one sales team and one plan*" (Beirne M. Malt beverages make a comeback. Available at Brandweek.com, accessed 22 October 2004). Impact, an industry publication reported: "*Diageo rolled out Smirnoff Ice in the US market … it suddenly put the once-stodgy Smirnoff name on the tips of millions of echo boomers' (young people born between 1979 and 1994) tongues*" (Zwiebach P. US spirits: Captain, Smirnoff lead charge as all top 10 brands achieve growth. IMPACT: Global News & Research for the Drinks Executive. 15 May 2003;1:18–20). Mosher and Johnsson suggest that total marketing requires the promotion of both the marketing message and its placement in the media, using both 'measured media' such as television, radio, print, and outdoor advertising, and 'unmeasured media' such as the Internet, product placement (eg in movies), and sponsorship of sporting events and concerts. They argue that, like other alcohol marketers, FAB producers are increasingly relying on unmeasured media to communicate its marketing messages, although that does not mean that they are reducing their spending on both sorts of media. Mosher and Johnsson cite figures showing that FAB producers in the United States, for example, increased their spending in measured media from $27.5 million in 2000 to $196.3 million in 2002, a seven-fold increase, and that over the same period, sales increased by 52 per cent. They assert that spending on unmeasured media was probably two to three times this amount, suggesting that total FAB promotions' spending in the United States alone, in 2002 alone, was $600 million or more.

Music

One analysis of music that is popular with youth found that 17 per cent of lyrics across all of the genres contained references to alcohol (Roberts et al, 1999). Alcohol was mentioned more frequently in rap music (47 per cent) than in other genres, such as country-western (13 per cent), top 40 (12 per cent), alternative rock (10 per cent), and heavy metal (3 per cent). A common theme is getting intoxicated or high, although drinking also is associated with wealth and luxury, sexual activity, and crime

or violence. As with television and film, consequences of drinking are mentioned in few songs and anti-use messages occur rarely. Product placements or brand name mentions occurred in approximately 30 per cent of songs with alcohol mentions and are especially common in rap music (48 per cent). From 1979 to 1997, rap music song lyrics with references to alcohol increased fivefold (from 8 per cent to 44 per cent); those exhibiting positive attitudes rose from 43 per cent to 73 per cent; and brand name mentions increased from 46 per cent to 71 per cent (Herd, 2005). There were also significant increases in songs mentioning champagne and liquor (mainly expensive brand names) when comparing songs released after 1994 with those from previous years. In addition, there were significant increases in references to alcohol to signify glamour and wealth, and using alcohol with drugs and for recreational purposes. The findings also showed that alcohol use in rap music was much more likely to result in positive than negative consequences.

A similar pattern is found for music videos (DuRant et al, 1997) where alcohol use was found in a higher proportion of music videos that had any sexual content than in videos that had no sexual content. Both the content, which has been shown to glamorise the use of alcohol, and the advertisements surrounding the music videos have a potential to make drinking alcohol more enticing to young viewers. Roberts et al (2002) in their analysis of music videos showed that substances of one kind or another (including smoke of unknown origin) appeared visually in 45 per cent of the overall sample of 258 videos, and were referred to verbally in 33 per cent. Illicit drugs were more likely to be referred to verbally than portrayed visually, while alcohol and tobacco were more likely to be portrayed visually than referred to verbally. Alcohol appeared visually in 37 per cent of the videos and was referred to verbally in 19 per cent. Alcohol was explicitly consumed in 32 per cent; lead characters (or members of the band) drank alcohol in 17 per cent and secondary characters in 27 per cent of all videos. Hard liquor was more likely to appear than wine/champagne or beer. Alcohol appeared most often in Rap/Hip-hop videos (49 per cent), followed by Hot-100 (37 per cent), Modern Rock (33 per cent) and Mainstream Rock (30 per cent). Looking only at the 95 videos in which alcohol appeared, it was directly associated with sex in 11 per cent, with operating a vehicle in 11 per cent, with partying in 67 per cent, and with violence in five per cent. Although only 15 per cent of all 258 videos portrayed sex/eroticism as a dominant theme, sex/eroticism was more likely to be a dominant

theme in videos that included portrayals of alcohol (25 per cent) than in videos that did not include alcohol portrayals (nine per cent).

Use of alcohol by adolescents has been associated with higher levels of music video exposure (Robinson et al, 1998; DuRant et al, 1997; Brown and Witherspoon, 2002). Robinson et al, (1998) found a 31 per cent increased risk of drinking initiation over 18 months for each 1-hour increase in watching music videos. Wingood et al, (2003) in a 12-month follow-up study found that African American female adolescents were 1.5 times more likely to have used alcohol if they had a greater exposure to rap music videos than were adolescents with less exposure to these rap music videos. Van den Bulck and Beullens (2005) examined the association between music video viewing and the amount of drinking in adolescents in Holland, finding that the quantity of alcohol consumed while going out in February 2004 was related to the adolescents' overall TV viewing and their music video exposure a year earlier. Even after controlling for gender, school year, and drinking in 2003, these results remained significant.

TV and film

When people are seen drinking on television they seem to be drinking alcohol most of the time (Brown and Witherspoon, 2002) and content analyses indicate that alcohol is shown or consumed in most films. Pendleton et al (1991), for example, found that every 6.5 minutes a reference to alcohol was made in their sample of 50 programmes on British television. Especially in fictional series the consumption of alcohol was prominently present. Roberts et al. (1999) found that 92 per cent (185) of the 200 most popular US movies for 1996–1997 contained images of drinking. Furnham et al. (1997) concentrated on the portrayal of alcohol and drinking in six British soap operas and concluded that 86 per cent of all programmes contained visual or verbal references to alcoholic beverages. More alcohol was consumed than any other kind of drink, but the sample of programmes almost never referred to the hazards of alcohol consumption. Van Dalen (2003) found that in 60.8 per cent of a total of 528 programmes on Dutch television in September and October 2002 which were investigated, there was a reference to alcohol. In 80 per cent of these, alcohol was prominently and favourably featured: it tastes good, it is relaxing, or it creates a pleasant atmosphere. And these portrayals are often of young people. Underage use

of alcohol occurred in approximately 9 per cent of the films reviewed by Roberts et al (1999). In general, drinking was associated with wealth or luxury in 34 per cent of films that contained alcohol references and pro-use statements or overt advocacy of use occurred in 20 per cent of these films. Statements that advocated against drinking appeared in only 9 per cent of the films with alcohol references. In all, 57 per cent of films with alcohol references portrayed no consequences to the user at all. Similar findings have emerged from other content analyses (Everett et al, 1998). Analyses of children's animated feature films found that even in these, 47 per cent of them depicted alcohol or drinking (Thompson and Yokota, 2001). None of these animated films contained an overt health warning about alcohol use and good or neutral characters accounted for most of the drinking portrayals.

In terms of images of drinkers, a content analysis of 100 films from 1940 to 1989 compared drinkers with non-drinkers, finding that drinkers were depicted more positively than non-drinkers (McIntosh et al, 1999). Specifically, drinkers were rated as having a higher socio-economic status, being more attractive, having more romantic and sexual involvements, and being more aggressive than non-drinkers. These films, however, presented negative consequences associated with drinking, such as death and loss of loved ones, on an equal basis with positive consequences, such as wealth and romance.

Van Dalen (2003) looked at hidden television advertising in the Netherlands, focusing on indirect advertising. He argues that because of the increased number of broadcasting stations, television advertising has become more expensive, leading to a search for alternatives, and that this explains the growing number of television programmes and events which are sponsored by the alcohol industry. Van Dalen argues that the mere presence of references to alcohol in many television programmes does not necessarily imply sponsorship: these programmes simply reflect the popularity of alcohol in social situations or as a tasteful drink. However, that does not mean that this kind of promotion is not important. Some argue that this hidden form of alcohol promotion has even more influence on attitudes to alcohol than the constant bombardment of programmed television commercials. In 81 per cent of the 528 programmes investigated, sponsoring may have been involved, since specific brand names of alcohol beverages were clearly visible on the screen – the process known as

'product placement'. The conclusion is that in many cases it is not clear whether sponsorship is in play. Certainly, alcohol is portrayed positively: in 80 per cent of the situations where alcohol was shown on television, it appeared in a favourable light. In only 9.2 per cent of the references to alcohol are the negative aspects of its consumption also mentioned. The positive references are to the taste (23.6 per cent), the relaxing effect (24.2 per cent), the companionable atmosphere created (19.6 per cent), and temptation and sexual contact (8.3 per cent).

Studies of the effects of exposure to depictions of drinking in films or television on youth are rare (Thompson, 2005). In one study, college students were exposed to one of two versions of 'A Star is Born'; one depicted the negative consequences of drinking for the lead character, whereas the other version had the negative consequences deleted (Bahk, 1997; 2001). Viewing the version that had deleted scenes led to more favourable attitudes toward drinking and to stronger intentions to drink. In a similar study, college students were exposed to a series of film clips that depicted negative consequences of spirits consumption, positive consequences, or a control condition with no drinking (Kulick and Rosenberg, 2001). Results indicated that participants who viewed the clips that showed positive consequences of drinking had significantly higher positive alcohol expectancies compared with controls. The control group and the group that viewed the clips that showed negative consequences did not differ in their intentions to drink spirits in the next week. Heavier viewers are more likely than lighter viewers to agree that ''people who drink are happy'' and ''you have to drink to have fun at a sporting event'' (Neuendorf, 1985). More recently, it was found that television viewing was related to initiation of drinking over an 18-month period (Robinson et al, 1998). Each 1-hour increase in television viewing at baseline was associated with a 9 per cent increased risk for initiating drinking during the following 18 months. As the review has summarised above under Parental Management, restricting exposure to R-rated films (contain more smoking than do films in all other rating categories) has highly significant effects on reducing the probability that adolescents will commence either drinking or smoking. Dalton et al (2002), for example, found that the prevalence of drinking among middle school students decreased as parental restrictions that were placed on viewing films increased. The prevalence of having tried alcohol was 46 per cent for youth with no parental viewing restrictions, 16 per cent for youth with partial restrictions, and 4 per

cent for those with complete restrictions. These prevalence rates held constant, even after controlling for other variables, such as student and parenting characteristics.

Very recently, Engels et al (2009), using an experimental design, looked at the causal relationships between viewing alcohol in films or via advertising and subsequent drinking behaviour. In a naturalistic setting (a bar lab), young adult male pairs watched a movie clip for one hour with two commercial breaks and were allowed to drink both non-alcoholic and alcoholic beverages. These participants were randomly assigned to one of four conditions, varying on the type of movie (many versus few alcohol portrayals) and commercials (alcohol commercials present or not). Those assigned to the conditions with substantial alcohol exposure in either movies or commercials consumed more alcohol than other participants (they drank on average 1.5 glasses
more alcohol than those in the condition with no alcohol portrayal, within a period of one hour). The authors conclude that, for the first time, their study has demonstrated a causal link between exposure to drinking models and alcohol commercials, and acute alcohol consumption.

Tickle et al (2001) looked at the portrayal of tobacco use in contemporary movies of favourite movie stars, and its association with adolescent smoking. 632 students (aged between 10–19 years from rural New England were surveyed to assess tobacco use, other variables associated with adolescent smoking, and favourite movie star. In addition, tobacco use by 43 selected movie stars was measured in films between 1994 and 1996. Of the 43 stars, 65 per cent used tobacco at least once, and 42 per cent portrayed smoking as an essential character trait in one or more films. Stars who smoked more than twice in a film were considered smokers. For adolescents whose favourite stars smoked in only one film, the odds of being higher on the smoking index was 0.78; for adolescents whose favourite stars smoked in two films, the odds of being higher on the smoking index was 1.5; for adolescents whose favourite stars smoked in three or more films (Leonardo DiCaprio, Sharon Stone, John Travolta), the odds of being higher on the smoking index was 3.1. Among ‘never smokers’ (n = 281), those who chose stars who were smokers in three or more films were much more likely to have favourable attitudes toward smoking. It seems clear that adolescents who choose movie stars who use tobacco on-screen are significantly more

likely to be smokers and have more favourable attitudes toward smoking than adolescents who choose non-smoking stars.

Distefan et al (2004) replicated this study in California, and introduced a longitudinal element. They asked adolescents in 1996 who had never smoked to nominate their favourite stars, and then followed them up three years later in 1999 to assess smoking status. They then reviewed popular films released between 1994 and 1996, to determine whether the stars smoked on-screen in at least two films. They found that one third of 'never smokers' nominated a star who smoked on-screen, which independently predicted later smoking risk. The effect was strong among girls, with no independent effect on boys, after control for receptivity to tobacco industry promotions. This provides further evidence for the effects of these forms for indirect marketing.

Product placement

Paying for products to be placed in films, television, books, and video games is another form of indirect marketing, which embeds alcohol in the daily lives of young people. Media placement decisions are the result of extensive market research and the use of standard market research databases to assess the demographic profiles of the audiences for various media vehicles, as well as the effectiveness of such vehicles in delivering target audiences to firms interested in placing advertising in them (Jernigan and O'Hara, 2004). Many adolescents are 'brand-conscious' and those that are, are also those who are most aware of and favourable towards product placements (Nelson and McLeod, 2005). They are also the ones who are most keen on movies, and who perceive both their parents and the peers to also be brand conscious.

Sports and other sponsorship, and newer media

The alcohol industry has been effective at linking its names and products with many sports, including many high profile ones such as soccer (Carling Cup) and rugby (Heineken Cup) in the UK. As Hastings was quoted as saying (above) "*Children are full of comments on brands; they know that Carling sponsor Celtic and Rangers and make comments on everybody knowing what Carling is*".

It is the case that commercial sponsorship has expanded greatly over the past two decades. Alcohol sponsorship has now become common across the world in all the key areas of youth culture: music, sport, dance, film and television. Anderson and Baumberg (2006) argue that sponsorship brings a number of potential benefits to the sponsor. It can provide a means of avoiding regulations on direct advertising. It is an inexpensive form of advertising which can easily reach favoured market segments (young men are both the keenest sports fans and the heaviest drinkers), and these consumers are less critical of it than traditional forms of advertising. Further, sponsorship of large international sports events can allow a company's brand to cross borders into countries where direct alcohol marketing may be severely restricted or even banned.

In 2002 in The Netherlands, eight of the top twenty most active sponsors of youth events (festivals, etc) were brands of alcohol: Bacardi was number two on the list and Heineken was number three. As van Dalen (2003) discusses, it is very difficult to monitor the amount of money spent on this kind of activity. It is also difficult to combat these youth-targeted marketing strategies because the self-regulatory code (in Holland) states that more than 25 per cent of those participating must be under eighteen years of age before a complaint can be accepted. Even were it possible to monitor the proportion of those aged under 18 at a pop festival, for example, the 25 per cent rule would still make it possible to reach an enormous number of very young people without the rule being broken.

These more insidious forms of marketing have increased hugely over the past decade, through the use of technologies such as the Internet, the adoption of racial, ethnic, and other holidays and celebrations and the expansion of sponsorship from sporting events to popular music concerts as alcohol marketing opportunities (Alaniz and Wilkes, 1998), to events in which alcohol is often a central part of the activities, thereby embedding products in young people's lifestyles and daily practices (Aaker, 1996; Fleming and Zwiebach, 1999). The rapid rise of information technology and, in particular, the Internet has given manufacturers a new promotional opportunity. Sophisticated web sites have been created using technology to produce interactive arenas with impressive graphics and eye-catching animation. Research on alcohol portrayals on the Internet has focused on youth access, exposure to alcohol marketing,

and the potential attractiveness of commercial alcohol web sites to youth. Research has not addressed the content of non-commercial web sites that focus on alcohol products or drinking cultures. Similarly, no study has addressed the potential effects on consumption by youth of exposure to alcohol portrayals and promotion on the Internet. The Center for Media Education (quoted in Grube and Waiters (2005)) found that commercial alcohol web sites are easily accessible to youth, and are often accessed from search engines through non-related key word searches for games, entertainment, music, contests, and free screensavers. Content analyses of web sites that are registered to large alcohol companies revealed that young drinkers are targeted through a glorification of youth culture that offers humour, hip language, interactive games and contests, audio downloads of rock music, and community-building chat rooms and message boards. Overall, these sites were found to promote alcohol use. Only a handful of them included any information on the harm done by alcohol.

Viral marketing techniques are also popular to encourage users to bring their friends to Internet sites, including features that permit users to send e-mail and mobile phone text messages to friends (Cooke et al, 2002; Casswell and Maxwell, 2005). One large USA beer company (Anheuser-Busch) is also leading the way in other forms of new media marketing. In April, they signed a deal with Mobi-TV, a leading provider of television content to cell phone users, to broadcast 18 beer ads per hour (Advertising Age, 2006). Little research has been done to date on the impact of such marketing on young people.

Summary – role of the media?

Wakefield et al (2003) summarise their view of the role of the media in influencing youth smoking, looking at the results of empirical studies on cigarette advertising and promotions, antismoking advertising, product placement in movies, on television and in music media and news coverage about smoking. They conclude that (a) *the media both shape and reflect social values about smoking*; (b) the media *provide new information* about smoking directly to audiences; (c) the media act as a *source of observational learning by providing models which teenagers may seek to emulate*; (d) *exposure to media messages about smoking also provides direct reinforcement for smoking or not smoking*; (e) the media promote interpersonal discussion about

smoking; (f) the media can influence 'intervening' behaviours that may make teenage smoking less likely; and (g) antismoking media messages can also set the agenda for other change at the community, state or national level.

It is difficult not to reach the same conclusions as far as alcohol is concerned too. As was stated at the outset of this section, the main findings from all of the reviews which have been undertaken are that well-designed longitudinal studies have shown that the advertising and marketing of alcohol are significant factors in the rise in consumption of alcohol by young people. Not surprisingly, young people who see, hear and read more alcohol advertisements and endorsements are more likely to drink and to drink more heavily than their peers.

What is the relative weight of these different influences on knowledge, attitudes and behaviour towards drinking?

The relative weight of

Family versus peers

An earlier section showed that adolescents who believe that drinking alcohol has many positive and few negative consequences are likely to start drinking earlier and more frequently than those with more negative expectancies. Moreover, positive alcohol expectancies (in early adolescence) predict more likely alcohol problems in later adolescence and in adulthood. Martino et al (2006) looked at what factors might influence such drinking expectations, showing that both peer and parental influences, as well as social bonding factors, are related consistently to adolescents' alcohol expectancies, among both drinkers and non-drinkers. They looked at 1,410 13 to 14-year-olds and followed them up over a 1-year period. They found that those adolescents with greater exposure to pro-drinking peer and adult influences, and with weak bonds to conventional social institutions (eg school, religion) had more positive beliefs about alcohol. The perceived potency of alcohol was also less in these adolescents. In their multivariate model, they found that greater alcohol use by important adults (usually parents) independently predicted increased alcohol positivity among drinkers; greater perceived approval of alcohol use by both parents and peers predicted diminished perceived potency of alcohol among non-drinkers. Martino et al suggest that attempts to alter adolescents' beliefs about the positivity and potency of alcohol need to address these socio-environmental influences, particularly peers and parents/adults who drink or approve of doing so.

Donovan (2004) reviewed longitudinal research studies focused on the initiation of alcohol use in adolescence to determine which variables function as antecedent predictors or risk factors. He found that the most consistent antecedent risk factors for starting to drink in adolescence were parental and peer approval, and their modelling of drinking and drug use, as well as adolescents' own prior involvement in delinquent behaviour. He found little evidence for gender differences in risk factors for alcohol use initiation.

Loveland-Cherry and colleagues (Donovan et al, 2004), in their study of very young drinkers, also showed that both peer and parental influences were important, showing that both peer pressure, and parental norms and monitoring, predicted very early onset of drinking (ie before fourth or fifth grade, age 9–11), and that such early drinking led to a steeper trajectory of growth in alcohol use and misuse in later childhood and adolescence. Results from their hierarchical multiple regression analyses show that children's perceptions of peer pressure was a significant correlate of both alcohol use (cohort A: grade 4 $\beta = 0.13$, grade 5 $\beta = 0.13$; cohort B: grade 5 $\beta = 0.13$) and alcohol misuse (cohort A: grade 4 $\beta = 0.23$, grade 5 $\beta = 0.35$; cohort B: grade 5 $\beta = 0.24$) in both of the cohorts they investigated. Parental factors were also consistent correlates of children's alcohol use, with them generally having the same strength as the peer factors. For alcohol use the figures were: parental monitoring (cohort A: grade 4 $\beta = 0.11$, grade 5 $\beta = 0.08$), parental norms (cohort B: grade 5 $\beta = 0.22$), and parental permissiveness (cohort B: grade 5 $\beta = 0.12$); for alcohol misuse, they were parental monitoring (cohort A: grade 4 $\beta = 0.13$, grade 5 $\beta = 0.13$; cohort B: $\beta = 0.08$) and parental norms (cohort B: grade 5 $\beta = 0.34$).

These results above of a similar level of influence by both parental and peer factors, are somewhat at odds with other results. For example, research by Bahr et al (1995) on alcohol use in a random sample of 27,000 students aged 13–18 years, in Utah USA, found the total effect of family bonds to be about half that of peer influence. That finding supported earlier research, also in Utah, with a sample of 1,507 high school students, where the primary direct predictor of illegal alcohol and drug use was shown to be association with antisocial peers (Kumpfer and Turner, 1991). Similarly, Duncan et al (2006) showed that rates of increase in use of alcohol from pre-adolescence to mid-adolescence, among 405 young people in three age cohorts (9, 11, and 13 years) who were assessed annually for four years, did not seem to be affected by family processes such as family cohesion, parent supervision (eg knowing children's neighbourhood friends) and parental alcohol use; whereas higher levels of peer deviance (eg vandalism, stealing) and peer encouragement of alcohol use (as well as being White and coming from a single parent family) were linked with increased rates of drinking between the ages of 9 and 16. However, they also found that, although peer encouragement is an important influence on the *increase* in

alcohol use between 9 and 16, it is negatively related to alcohol *initiation*, which is more significantly affected by higher levels of parental alcohol use.

Engels and van der Vorst (2003) looked in more detail at these findings of a greater influence of peers as opposed to parents. They did this by examining three types of parental influence: the role of *parental alcohol use* in the development of adolescent drinking; the impact of *general parenting practices* on adolescent alcohol consumption; and the *indirect influence parents have* on their offspring's immediate peer environment. These types of parental influences were tested using empirical data from both a five-year longitudinal study (n = 958) on parental drinking behaviour, adolescent and best friends' alcohol use and peer relationships, and a cross-sectional study (n = 508) on parenting practices, adolescent and peer drinking. Their findings showed moderate prospective effects of parental drinking on respondent's alcohol use, and also on their children's best friends' alcohol consumption, as well as small effects of general parenting practices on adolescent and peer drinking.

Gerrard et al (1999) were interested in seeing if association with peers who drink, dilutes parental influence over adolescents' alcohol consumption. They looked at a sample of 266 rural adolescents aged 15–-17 at the start of this project and their parents and siblings (all of whom completed questionnaires about drinking behaviour and drinking-related cognitions at 1-year intervals for three years.) They found that there were strong influences from parents to their children, especially the transmission of the parents 'prototypes' of 'adolescent drinkers' which were transmitted from parents to adolescents. They found evidence that these prototypes mediated adolescent alcohol consumption. However, they found that although parents' prototypes and parent–adolescent relationships are important in shaping the adolescents' drinking, association with peers who drink, significantly attenuated this influence. They concluded that parents can influence their children's drinking, but that this influence has more of an impact if the adolescent is not involved in a drinking-conducive peer environment. They further suggested that the process of becoming an adolescent drinker involves an active rejection of parents' influence rather than a passive movement away from parents' attitudes and beliefs: a process that is accelerated by association with peers who drink.

Marshall and Chassin (2000) were also interested in the relationship between parents and peers, seeing these two influences not as necessarily independent or oppositional, but instead as being moderated by one another. Their study, with 300 children aged between 10.5 and 15.5 years, tested the moderating effects of parental social support and consistency of discipline on the relation between adolescents' affiliation with drug-use promoting peers and their subsequent alcohol use. Their results indicated that both mothers' and fathers' social support and consistency of discipline buffered the effects of peer group affiliation on girls' alcohol use; but that both variables *increased* peer effects on boys' alcohol use. They argue that these results imply that, for *girls*, results are consistent with the notion that parenting behaviours can serve as protective factors by promoting qualities that serve to resist peer group pressure; but for *boys*, increases in support and discipline behaviours may be interpreted as threats to autonomy.

Others have also looked at the moderating or indirect influence of parents on their children's friends. Nash et al (2005) looked at the interrelationships between family environment, peer influence, and parental expectations, by examining 2,573 young people aged 15–16, and following them up until age 17–18. Variables they were interested in included family environment (adolescents' perceptions of parental acceptance, parental monitoring, and communication with parents), peer influence (use of alcohol by same-age peers and friends, friends' approval of alcohol use), as well as adolescent alcohol use (quantity, frequency, and associated problems), self-efficacy, and stress. They found that family environment exerted significant indirect effects on adolescent alcohol use *through* peer influence, as well as through self-efficacy, and stress; and that parental expectations significantly moderated all structural paths. They concluded that parental expectations of adolescent alcohol use significantly moderated all relationships in their structural equation model, and greater parental disapproval was associated with less involvement with friends and peers who use alcohol, less peer influence to use alcohol, greater self-efficacy for avoiding alcohol use, and lower subsequent alcohol use and related problems.

Simons-Morton (2004a) was also interested in the influence of drinking expectancies and parent expectations, alongside peer influence and school engagement, on *drinking initiation* among 1,009 11–12-year-olds, who were surveyed twice, at the start and the

end of their 6th grade at school. At the start of the year, 55/1009 (5.5 per cent) reported drinking in the past 30 days; at the end of the year this had risen to 127/1009 (10.9 per cent), of whom 101 were new drinkers (not all of those who had drank in the past 30 days at the year start reported drinking similar drinking at the year end). In multiple logistic regression analyses, *school engagement* was negatively associated, and *peer influence* and *drinking expectancies* were positively associated, with drinking initiation. A significant interaction was found between drinking expectancies and *parental expectations*: among those with high drinking expectancies, those with low parental expectations for their behaviour were 2.6 times more likely to start drinking than those with parents with high expectations for their behaviour. Positive drinking expectancies were significantly associated with drinking initiation *only among teens who believed their parents did not hold strong expectations for them not to drink*. This finding held for boys and girls, Blacks and Whites and was particularly strong for Black youth.

Wood et al (2004) also examined the influences of peer and parent variables on alcohol use and problems, this time in a sample of 556 late adolescents (mean age = 18.1 years), finding significant associations between both peer and parental influences and alcohol involvement, and showed that parental influences moderated peer-influence-drinking behaviour, such that higher levels of perceived parental involvement were associated with weaker relations between peer influences and alcohol use and problems. These findings suggest that parents continue to exert an influential role, even in late adolescent drinking behaviour.

Wood (2007) argues that, although direct models of parental influence show a reduced impact of parental and family variables, and an increased impact of peer ones, the indirect protective effects of parental involvement on adolescent substance use is still important. He argues that both his own cross-sectional study (Wood et al, 2004) and other, prospective studies, (Marshall and Chassin, 2000; Gerrard et al, 1999), all described above, in samples spanning early to late adolescence, have demonstrated that parental involvement can impact on and reduce peer influences, albeit with some variability according to gender and peer environments.

The work described above has all been examining the relative impact of family versus peer influences solely on alcohol. Other work has looked at this issue across a number of substance use areas. Beal et al (2001) attempted to determine whether parent social influences were more associated than peer social influences with health-risk behaviours among young minority adolescents. They surveyed all 208 7th grade (aged 12–13) students in one school as part of a needs assessment for a school-based health education program. They measured four health-risk behaviours: use of tobacco and alcohol, onset of sexual activity, and marijuana use; and five social influences: (a) parent disapproval of health-risk behaviours, (b) parent modelling of health-risk behaviours, (c) parent monitoring of health-risks, (d) peer disapproval of health risks, and (e) peer modelling of health-risk behaviours. They found that 20 per cent of respondents reported using tobacco, over 50 per cent used alcohol in the past year, 13.3 per cent were sexually active, and 12 per cent reported marijuana use. Parent influences were associated only with differences in alcohol use, whereas peer influences were associated with differences in all measured health-risk behaviours: tobacco and alcohol use, sexual activity, and marijuana use. Regression analyses demonstrated that peer social influences were the only measures independently associated with abstinence from tobacco ($p < .05$), alcohol ($p < .01$), sexual activity ($p < .05$), and marijuana use ($p < .05$). In all analyses, peers emerged as the most consistent social influence on health-risk behaviour. Rai et al (2003) looked at the relative influences of perceived parental monitoring and perceived peer involvement on adolescent risk behaviours, using six cross-sectional data sets involving 1,279 low income African American youth aged 13–16, involved in community-based studies conducted over a decade in an urban area. They found (unsurprisingly) that there was a rapid increase in sexual activity and substance use behaviours during mid-adolescence, and that parental monitoring had a protective influence on substance use behaviours and sexual activity, but had no impact on condom use or drug trafficking. Again, peer involvement influenced all evaluated risk behaviours. Again, although some aspects of parental behaviour (in this case, monitoring) do appear to have an influence, this study again shows that peer involvement is a major influence on a wide range of adolescent behaviours.

Results such as these, as discussed above when looking only at alcohol, imply that peers and peer group behaviour may be better predictors of adolescent health risk

behaviours than parental social influences among young adolescents. However, Bahr et al's (2005) findings suggest a more indirect route whereby parents influence children's behaviour. They looked at parental and peer influences on the risk of adolescence using a range of substances: alcohol (both use and binge drinking), cigarettes, marijuana, and other illicit drugs. They looked at 4,230 adolescents from grades 7–12 (ages 12–18) and estimated the effects of peers and of six family variables, on the risk of adolescents using any of these substances. They found that, for each substance, peer use had relatively strong effects on adolescent use, but that parental attitudes to that substance, sibling use, and parental use all had significant direct effects, net of peer influences. In addition, each of these had significant *indirect* effects that were mediated by peer drug use. In terms of direct effects of other parental variables, the influences of parental monitoring, attachment to mother, and attachment to father were all statistically significant but relatively small. They reported that their findings applied to each of alcohol use, binge drinking, cigarettes, marijuana, and other illicit drugs. Similarly, Simons-Morton et al (2001) also looked at peer and parent influences on both drinking and smoking among 4,263 6th–8th grade (aged 11–14) early adolescents. Although the authors conducted separate multiple logistic regression analyses for smoking and drinking, controlling for grade, sex, and race, they found positive independent associations with both drinking and smoking, for direct peer pressure and associating with problem-behaving friends. On the other hand, independent negative associations with both drinking and smoking were also found for parent involvement, parent expectations, and parent regard. In an analysis of interactions, peer pressure was positively associated with drinking for girls but not for boys and problem-behaving friends was positively associated with drinking for both boys and girls. Simons-Morton et al suggest that these findings are consistent with the hypothesis that associating with deviant peers promotes, and that authoritative parenting protects against, smoking and drinking.

As well as work which has looked at the relative influence of parents versus peers on the use of alcohol, there has been other research specifically into these influences on smoking and on illicit drug using behaviour.

In many ways, the smoking research demonstrates even more clearly the importance of peer influences. Similar to the research on alcohol cited above (Bahr et al, 1995;

Kumpfer and Turner, 1991), peer bonding also has been found a more consistent factor than family bonds or parental smoking in identifying students likely to try smoking (Conrad et al, 1992). Other studies have found that parental smoking is a key variable. For example, de Vries et al (2003), using data from a longitudinal study of 15,705 adolescents (mean age = 13.6) from across Europe of their smoking status, and that of their parents, best friend and friends in general, found that adolescent smoking was most strongly associated with friends' smoking and best friend's smoking, explaining 38 per cent of the variance in the total sample. However, a longitudinal regression analysis showed that parental smoking behaviour was found to be as predictive of smoking onset after one year as friends' smoking status.

Again a number of researchers have looked at interaction effects between parental or family influences and peer ones. Engels et al (2004) found similar results, using a longitudinal study of 1,595 adolescents. They found that there were high similarities in smoking between reciprocal friends, that friend's smoking and parents' smoking were moderately related to adolescent smoking onset, and that parental smoking seemed to affect the selection of new friends and in particular, adolescents with smoking parents were most likely to become affiliated with smoking friends. Simons-Morton (2002) undertook a prospective analysis of peer and parent influences on smoking initiation among 1,081 early adolescents (11–12 year olds), surveying at the start and the end of their 6th grade. They found significant positive associations between smoking initiation and problem-behaving peers, perceived prevalence of smoking in their age group, and depression; and significant negative associations with adjustment to school, perceived social competence, parental expectations, parental monitoring, and parental involvement. In multivariate logistic regression analyses (controlling for sex, race, and school) peer affiliation and perceived prevalence were positively associated, and social competence and parental monitoring were negatively associated, with smoking initiation. A significant interaction between parental involvement and peer affiliation indicated that among teens with problem-behaving friends, *only those with parents who were relatively uninvolved* were at increased risk for smoking initiation. This finding held for boys, girls, Whites, Blacks, and teens living in single parent families. Simons-Morton argues that these findings provide evidence that antecedent parenting behaviours may protect early adolescents against smoking even in the context of negative peer affiliation.

In a later study, Simons-Morton (2004b) looked further at the protective effect of parental expectations against early adolescent smoking initiation. 1,002 students were surveyed at the beginning of the sixth grade (aged 11–12), and then again at the end of the sixth and seventh grades. He found that association with friends who smoke, attitudes toward deviance, outcome expectations for smoking, perceived school climate, parental expectations, parental involvement at first assessment and increases in these variables between first and second assessments were associated with smoking initiation by the time of the third assessment. He also found that measures at first assessment of social competence, academic engagement, school adjustment, perceived prevalence, parental monitoring and parental involvement were all associated with smoking initiation by the time of the third assessment. In multivariate logistic regression analyses, parental expectations were negatively associated, and increases in attitudes accepting of deviance, and affiliation with friends who smoke were positively associated, with smoking initiation. The data provided an unusually good opportunity to determine if the protective effect of parenting behaviours was due to indirect effects on changes in attitudes or on friends who smoke. It is possible that parental involvement moderates the effects of peer influences on smoking initiation, and indeed others have found that boys' substance use was consistent with the behaviour of their best friends when parental monitoring and involvement were low (Dishion et al, 1995). However, his analyses of interactions found no significant mediating effects of attitudes or peer affiliation. Simons-Morton therefore concluded that antecedent parental expectations provide *an independent protective effect* against smoking initiation, even in the presence of increases in affiliation with peers who smoke and attitudes accepting of smoking. He further suggests that one important variable to be further considered is parental communication: "*Because most parents of middle school-aged children expect their early adolescent not to smoke, the difference may be how clearly parents transmit their expectations to their children*" (p 568).

There is also the issue of long-term versus short- or medium-term effects, with parents affecting their children's long-term goals and values. One longitudinal study of smoking behaviour in Norway (Oygard et al, 1995) found that at baseline and two years later, smoking in adolescents was strongly associated with smoking behaviour

of friends and siblings; but after a 10-year interval, mothers' baseline smoking emerged as the most important predictor of daily smoking among young adults.

The research into the relative influence of parents versus peers on the use of illicit drugs is also instructive. Guo et al (2002) showed that the risk for initiating illicit drug use increased steadily from ages 12 to 21. They found that low levels of family bonding and high levels of peer antisocial activity were consistently associated with higher prevalence of illicit drug initiation among youths ages 12 to 21 compared with prevalence seen when high levels of family bonding and low levels of peer antisocial activity were present. Unsurprisingly, by age 21, a high level of family bonding had far less impact than in earlier years on adolescent drug initiation. However, they also found that, although family and peer factors had similar effects on males and females, family monitoring and rules had a stronger protective effect for males than females. They found that many of the parenting and family variables summarised earlier in this review were important in the initiation of illicit drug use, finding that all of the measured family factors were influential. Higher levels of family monitoring and rules were associated with a significantly lower risk of illicit drug initiation. For example, young people with low levels of family monitoring and rules at age 18 were twice as likely (14 per cent versus 7 per cent) to initiate illicit drugs as those with high family monitoring. The same was true for a higher level of moderate and consistent family discipline – young people with low consistent family discipline were over twice as likely (15 per cent versus 6 per cent) at age 18 to initiate illicit drugs as those with high consistent family discipline. They found that family bonding was particularly influential before the age of 18: young people with low family bonding at age 15 were three times more likely (9 per cent versus 3 per cent) to initiate illicit drugs than those with high family bonding. Higher levels of family conflict were associated with a higher risk of initiation. For example, youths with high family conflict at age 18 were over twice as likely (15 per cent versus 6 per cent) to initiate illicit drugs as those with low family conflict. High levels of peer antisocial activity, especially after age 15, found youths at age 18 nearly four times as likely (19 per cent versus 5 per cent) to initiate illicit drugs as those with low antisocial peer influence. They also found a clear interaction between family factors and peer factors, with family monitoring and rules reducing the risk of initiation primarily by affecting the child's choice of peer groups, whereas children with low bonding to parents were

more likely to get involved with illicit drugs, even if they did not have antisocial or drug using peers. Family and peer factors affecting illicit drug initiation were similar across gender and ethnic groups, with only two exceptions. Family monitoring and rules had a stronger protective effect for males than for females; and family monitoring and family bonding were more predictive for European Americans than for African Americans. Possibly the most important set of findings from this study is the age at which these family effects are still important. They found that there was only one family factor (family bonding) which started to decline in importance, and that was only the case after the age of 18. The authors suggest that both family and peer factors should be important targets for preventive efforts, with these efforts starting early and continuing into young people's twenties, emphasising family bonding early and family monitoring, rules, and reduction of conflict throughout.

This interaction between family and peer influences is found not only for alcohol, drugs and smoking: similar results have been found for other risk-taking behaviours. For example, Michael and Ben-Zur (2007) looked at risk-taking among adolescents, examining risk behaviours in the areas of driving, health, drugs, lawbreaking, and social daring (eg taking risks to impress your friends). Their sample of 269 Israeli adolescents completed questionnaires measuring frequency of involvement in risk-taking behaviours, relationships with parents, orientation towards peer group, depressive mood, and aggressive behaviour. Analyses showed that risk behaviour among male adolescents was mainly related to orientation towards peer group, while for female adolescents relationships with parents was the prominent factor in risk behaviour. The parental factor also contributed to the depressive mood of both genders in the sample, although depressive mood showed only a weak association with risk taking. They interpreted their results to suggest that there were differential associations of relationships with parents versus peers among adolescent boys and girls, respectively, in regard to risk taking.

The relative weight of

Siblings versus peers

Almost all of the work undertaken on examining the relative influence of family versus peers has concentrated on parents as the important family members. Asbridge et al (2005) looked specifically at the relative influence of siblings and peers on

tobacco use, while at the same time examining ethnicity and culture (which will be examined in a later section). They found that that the discrepancies that they discovered between the different ethnic groups which they examined were influenced (depending on the ethnic group) by a combination of whether peers and /or siblings smoked, with the direct effect of having close friends who smoke being more powerful than having siblings who smoke (having close friends who smoke decreases the odds of being a non-smoker by 87 per cent, while having siblings who smoke decreases the odds of being a non-smoker by 53 per cent). Scholte et al (2008), in their study of 3,760 twins (1,687 boys, 2,073 girls) with a mean age of 17.8 years, showed that in each of their three age groups (12–15, 16–20, 21–25), regular drinking of both same-sex co-twins and friends posed the highest risk for regular drinking. Age differences indicated that these risks decreased with age. Irrespective of age, regular drinking of fathers and mothers posed the lowest risk. Findings were generally the same for males and females. Poelen et al (2007) in their study (n = 416) of the alcohol use of the adolescent's best friend, sibling and sibling's best friend on the development of alcohol consumption during adolescence, showed a strong similarity in drinking between best friends and adolescents cross-sectionally. Over time, however, only marginal effects of friends' alcohol use on drinking of the youngest sibling, and no effects for the oldest sibling, were found. Robust evidence was found for peer-selection processes. In addition, they found a moderate to high relative similarity in drinking within sibling pairs, but no longitudinal effect of sibling's drinking. They also found no support for a possible additional influence of sibling's best friend's drinking on adolescent drinking. They also tested several potential moderating variables on peer influences, but found no effects of a set of relationship characteristics or individual characteristics on the links between peer and adolescent drinking over time.

Much of the work reviewed in all of the subsections above on the relative influence of family versus peers has been atheoretical. Kuther (2002) brought together earlier theoretical work on Decision Theory (also known as subjective expected utility (SEU) theory) and the Theories of Reasoned Action (Ajzen and Fishbein, 1973, 1980; Fishbein and Ajzen, 1975) and Planned Behavior (Ajzen, 1988, 1991), all of which explain decision-making as a rational activity, with the extensive work reviewed above on the contribution of parents and peers to adolescent alcohol consumption.

She proposed a model which integrates the theory of planned behaviour and alcohol-related outcome expectancy theory with modifications based on the results from research on parental and peer influences, although this is yet to be tested.

Wilkinson and Abraham (2004) attempted to develop an integrated, theoretically informed model of the antecedents of adolescent smoking. They undertook a classroom-based survey of 225 13 to 14-year-olds in the UK, measuring previously identified correlates of smoking as well as measures of behaviour-specific cognitions derived from the Theory of Planned Behaviour (TPB), and then examined smoking status six months later. They found high initial rates of smoking; and of the variance in smoking six months later, 56 per cent was explained by seven direct predictors: intention, perceived ease of smoking, estimated number of friends smoking, percentage of older brothers smoking, self-esteem, extroversion and car access. They also found that some antecedents, such as parental support, indirectly influenced adolescent smoking through their effect on other variables. They interpreted these results as providing evidence for the importance of behaviour-specific cognitions specified by the TPB but they also suggested that other factors, including extroversion and self-esteem, need to be included in models of the antecedents of smoking.

In a further examination of the theoretical base for such studies, Taylor et al (2006) review four major theories which have been used as the basis to study and predict health related behaviour-change, measured in terms of shifts of knowledge, attitude, intention and behaviour. In addition they consider the extent to which social, environmental and economic factors have been included in the models identified. The four theories they examine are two of the ones that Kuther (2002) drew together (the Theory of Reasoned Action (TRA) and the Theory of Planned Behaviour (TPB)), together with two others: the Health Belief Model (HBM), and the Trans-Theoretical Model (TTM, often also referred to as the Stages of Change – SoC – model). They argue that their review demonstrates that: the HBM has a relatively weak predictive power; the TRA (Theory of Reasoned Action) was a substantially better predictor of health behaviours; the predictive performance of both the TRA and the TPB is superior to that of the HBM, and also that the additional constructs contained in the TPB allow it to predict a greater percentage of overall behavioural variance than the TRA; the TTM/SoC-based approaches are no more likely to be effective than

alternative (rationally designed) interventions in achieving desired behavioural change outcomes. They state that:

> "*This review identified no evidence as to the extent to which the use of the HBM, the TRA, the TPB or the TTM has been responsible for (as distinct from being temporally associated with) major shifts in key fields such as cardio-vascular disease mortality and morbidity. … Further, despite claims made about the importance of theory in developing effective public health interventions, the evidence analysed during this review does not show that approaches utilising social cognition models outperform others, such as 'social marketing' programmes based more on outcome feedbacks than theoretical analyses*" (p14).

However, they conclude that, even if not fundamentally causal, changes in health knowledge and attitudes can contribute to individual and population behaviour changes over time. They argue that there is evidence that health-behaviour change (HBC) interventions in fields such as smoking cessation, exercise, diet and HIV risk control have reduced mortality and morbidity from conditions such as lung cancer, chronic obstructive pulmonary disease (COPD), cardiovascular disease (CVD) and acquired-immune deficiency syndrome (AIDS); but they accept that the specific part played by one psychological model as opposed to another in achieving such health outcomes is uncertain.

In summary, many of these studies described above provide contradictory results, and there does not appear to be the consensus over the relative weight of peers versus family that there is over more specific family influence.

There are a number of issues here. First, there are effects of *peer influence* versus *peer selection* on the substance use behaviour of young people, with increasing evidence that the family has an important role in enabling young people to *select who their peers are*: hence if they select peers who are themselves less likely to use substances, there is a powerful parental influence at work.

Once experimentation with alcohol or drugs has occurred, parental influence may exert itself indirectly through choice of friends by the adolescent (Aseltine, 1995; Kandel and Andrews, 1987; Nash et al, 2005; Wood et al, 2004). Whether students

choose positive or negative peers may be also influenced by self-esteem which in turn is predicted by both family and school climates. Family and peer groups have become increasingly recognised as mutually influential and interdependent (Duncan et al, 1998; Parke and Ladd, 1992), and rather than searching to determine which influences dominate the likelihood of drug use in young people, a more productive approach may be to examine how these two forces interact (Walters, 1994).

Second, the significance of overt peer *pressure* in drug use is neither proven nor reliable (Coggans and McKellar, 1994) and emphasising the power of peers may lead to an underestimation of the effects that parents have on their children (McCallum, 1996). Third, there are arguments that peer influence may be a less important determinant of adolescent drug behaviour than has been commonly assumed (Bauman and Ennett, 1996). Adolescents often attribute their cigarette smoking to the behaviour of their friends but there may be a strong tendency for adolescents to project their own behaviour onto their friends, and to believe that their friends smoke more than they actually do (Bauman and Ennett, 1996).

Further, adolescents' susceptibility to various sources of interpersonal influence has been found to vary at different stages of drug involvement. The influence of parents has been found to be strongest, even crucial, preceding initiation into adolescent delinquency and marijuana use (Patterson et al, 1992). The transmission of cultural values from parent to child may be important and younger adolescents who are still non-users are more susceptible to the influence of their parents as models and sources of authority (Kandel and Andrews, 1987). Youths who enjoy a more positive relationship with their parents may be less influenced by drug-using peers, and consequently be less involved in drug-using activities (Walters, 1994). Early drinking experiences generally take place within the family environment (Foxcroft and Lowe, 1991), and this may introduce appropriate behaviours regarding use. One study found that 69 per cent of delinquents initially used alcohol without parental permission, compared to 25 per cent of non-delinquents (Pearce and Garrett, 1970).

The family can continue to be a moderating influence throughout adolescence and even young adulthood (Foxcroft and Lowe, 1991; Brook et al, 1985; Krosnick and Judd, 1982; Wood et al, 2004; Guo et al, 2002), although parental influences decrease

as adolescents' age increases (Kandel, 1985; Forster, 1984, Guo et al, 2002) and at particular stages of adolescent development (Aseltine, 1995). Bailey and Hubbard (1990) report that quality of communication with parents is the best predictor of marijuana use among seventh graders, but peer use and approval are better predictors of initiation among ninth graders.

Parents may affect *long-term* goals and values however (Sebald, 1986; Wilks, 1986). One longitudinal study of smoking behaviour in Norway (Oygard et al, 1995) found that at baseline and two years later, smoking in adolescents was strongly associated with smoking behaviour of friends and siblings, while after a 10-year interval, mothers' baseline smoking emerged as the most important predictor of daily smoking among young adults.

The relative weight of

Parents, peers and media/marketing

Compared to the amount of research undertaken trying to separate out the effects of family versus peer influences, there has been only a small amount of work on looking across family and peer influences and also adding in the influence of media, marketing and advertising.

Martino et al (2006) in their study of what factors might influence drinking expectations, found that amount of exposure to alcohol advertising did not influence alcohol outcome expectancies, after taking into account more immediate social influences. They concluded that

> "*although advertisements expose adolescents to social models of drinking, young people are likely to be influenced more strongly by their peers, parents and important adults with whom they have a relationship than by people they do not know and perhaps do not care about*" (page 980).

Austin et al (2000) looked at the role of interpretation processes and parental discussion on the media's effects on adolescents' use of alcohol. Using a cross-sectional survey of 5,252 9th grade (aged 14–15) and 5,326 12th grade (aged 17–18)

Californian students, they examined adolescents' viewing patterns, beliefs about alcohol and media messages, and parental discussion of media messages, in the context of a theoretical model of message interpretation processes. Measures included the degree to which adolescents found portrayals desirable, realistic, and similar to their own lives; the degree to which they wanted to be like (or identify with) the portrayals; and the degree to which they associated positive outcomes with drinking alcohol (expectancies). They found that effects of media exposure on drinking behaviour, controlling for grade level, ethnicity, gender, household income, and education levels, were primarily positive and indirect, operating through a number of intervening beliefs, especially expectancies. Direct associations, primarily with exposure to late-night talk shows, were small. Parental discussion also affected behaviour indirectly, operating through expectancies, identification, and perceived realism. The appeal of products with alcohol logos, which was higher among the younger students and predicted by expectancies, sports viewing and late-night talk shows, predicted actual drinking behaviour. The authors concluded that adolescents make drinking decisions using a progressive, logical, decision-making process that can be overwhelmed by wishful thinking. The potential risk of frequent exposure to persuasive alcohol portrayals via late-night talk shows, sports, music videos, and prime-time television for underage drinking is moderated by parental reinforcement and counter-reinforcement of messages. Interventions need to acknowledge and counter the appeal of desirable and seemingly realistic alcohol portrayals in the media and alert parents to their potential for unintended adverse effects.

Thomsen and Rekve (2006) came to a rather different conclusion. They looked at the relationship between viewing US-produced television programmes and family rules prohibiting alcohol use on the development of normative beliefs, expectancies, and intentions to drink alcohol in the next 12 months among a group of 392 eighth and ninth grade (aged 13–15) Norwegian adolescents who reported that they had not previously consumed alcohol. They also controlled for the influence of having friends who drink alcohol. The findings indicate that the influence of TV exposure was a significant predictor (directly) of normative beliefs, expectancies (indirectly) and intentions to drink (both directly and indirectly) *only* for those subjects who reported having no friends who drink. For the group with non-drinking friends, family rules constrain intentions only indirectly by influencing normative beliefs. For those with

friends who do drink, however, family rules have a direct (inverse) effect on intentions.

It is possible to conclude that the potential risk of frequent exposure to persuasive alcohol portrayals via late-night talk shows, sports, music videos, and prime-time television for underage drinking can be moderated by parental reinforcement and counter-reinforcement of messages.

Overall summary of impact of parents, family, peers and media

It is clear from many reviews of both risk and protective factors (McIntosh et al, 2003; Madu and Matla, 2003; De Micheli and Formigoni, 2002; Orford, 2001; Challier et al, 2000; Spooner, 1999) that the taking up of substance use and the development of problematic use is affected by a huge number of influences. It is also clear from the research reviewed in this section, however, that although there are many other influences, the factors associated with the family are highly important. This has implications for interventions aimed at preventing substance use and misuse.

Parental alcohol use has consistently been shown to positively associate with adolescent use of alcohol: in fact, most young people are with parents or other family members when they first use alcohol and (especially among early initiators) they tend to be at home. Besides influencing the alcohol use of young people directly, family substance use is also likely to exert an indirect effect through its impact on family relations and parenting practices. For example, a great deal of research has shown how important variables such as family climate and parenting practices are, on the development of a variety of adolescent problem behaviours, including alcohol use. According to many models of the risk factors for problem behaviour, low family involvement and poor parenting practices place children at high risk of engaging in problem behaviours. Similarly, in family socialisation theory, a key dimension is parental control (also referred to as discipline, punishment, supervision, and monitoring). Research suggests that poor parental monitoring and discipline are associated with higher adolescent alcohol use, and that poor relationships with parents predict substance use. Family cohesion has been found to play a protective role in suppressing levels of alcohol consumption among youth.

Although family influences and parenting practices account for a considerable amount of variance in the prediction of young people's alcohol use, it has long been recognised that the family represents only one of several interrelated social contexts that affect the development of alcohol use, other substance use, and problem behaviours among youth. The literature reviewed above on peer influences on adolescent alcohol use suggests that the influence of peers is at least equal to, if not greater than, that of parents and other family members. Association with alcohol- and drug-using peers, or with those who are antisocial, and peer encouragement to use alcohol, have been shown to influence adolescent alcohol use. As children age, they spend more time with friends compared to family, increasing the potential for negative peer influences. There is some evidence that peer influence on youth becomes greater with age and is particularly influential in the early stages of substance use. On the other hand, as reviewed in previous sections, there is a strong reciprocal interaction between family and peer influences, with the family having an important influence on who young people select as their peers, including often influencing them to select peers who are themselves less likely to use substances, and less likely to misuse substances once experimentation with alcohol has occurred. Adolescents' susceptibility to sources of interpersonal influence varies at different stages of substance involvement. Non-drinking adolescents may be more readily influenced by parents. The family can be a moderating influence throughout adolescence and young adulthood, and although parental influences decrease as adolescents mature, there is also evidence that parents may affect *long-term* goals, values, and peer selections. In summary, family and peer groups are mutually influential and interdependent in determining the likelihood of substance use among young people.

It is generally accepted that frequent exposure to persuasive alcohol portrayals via a huge range of media, both in direct advertising and via indirect means, has a major impact on children's developing knowledge, attitudes, intentions and then subsequent behaviour. Although findings are somewhat mixed, it is also generally accepted that the impact of these portrayals can be mediated by the range of parental and family factors reviewed above, and that especially parental reinforcement and counter-

reinforcement of messages, open communication, parental monitoring, and clear rules, can help to offset some of these media socialisation effects.

What impact do other variables such as ethnicity, religion, socio-economic status, culture, etc have on these attitudes and behaviours?

It is highly likely that a range of factors related to culture – nationality, ethnicity, religion, socio-economic status, and so on – will have a great deal of influence on the development of young people's knowledge, attitudes and behaviour. However, whereas many of the factors examined in this review so far are to a large extent generalisable across at least the Western world, this is not the case with the impact of these other factors. The role, for example, that ethnicity plays in influencing young people in the USA is likely to be different to the role that it plays in the UK – partly because the range of ethnic groups and the overall ethnic mix is so different, partly because how ethnicity is dealt with in each country is so different.

A large part of the research examined in the previous parts of this review has stemmed from the USA or Holland. This has not mattered in reviewing those elements, but for the following sections (other than the influence of national culture), primarily UK research will be examined.

Country and its relationship with young people's attitudes and behaviour towards drinking

It has been known for some time that drinking patterns are highly influenced by culture. This occurs at many levels: there is an overall national culture which determines what the collective norms are for drinking behaviour, and within that overall culture there are various subcultures within which a young person will grow up which will further impact on their knowledge, attitudes and later drinking behaviour.

Comparative studies across countries suggest that overall drinking culture is an important determinant of how young people drink. It used to be the case that, within Mediterranean cultures for example, young people would be more likely to drink and drink more often than their counterparts in other regions (Hibell et al, 2000; Norström, 2002; Currie et al, 2004), but they would also be less likely to engage in excessive and extreme drinking patterns, to get drunk, or to display otherwise problematic drinking behaviours. In contrast, young people in Scandinavia were more

likely to start to drink at an older age, and then to drink in a problematic and risky way. These and other findings (eg Heath, 2000; ICAP, 2004) suggest that culture plays a prominent role in setting norms and expectancies around drinking, including young people's drinking.

Stating that there are such generalisable cultural patterns runs the risk of obscuring national differences. For instance, a 1993 survey in the Czech Republic found that most young people had used alcohol prior to age 12, a substantial increase over a similar study conducted in 1978 (Ferrer et al, 1995; WHO, 2004). In contrast, a national survey in Spain of persons aged 18 and over conducted in 1989 found the average age of first use to be 16.7 years (Royo-Bordonada et al, 1997). Age of initiation is subject to many cultural factors. However, in at least some developing countries, the age of experimentation is much younger – 10.1 years, for instance, in Porto Alegre, Brazil (Pechansky and Barros, 1995). Similarly, for children under particular kinds of stress, age of initiation and likelihood of frequent consumption may be greater. For instance, street children between the ages of 6 and 18 in Brazil who lived with their families and attended school were less likely to drink alcohol than those who spent all day in the streets and slept there. In the latter group, 25 per cent drank alcohol daily (Forster et al, 1996). Another study of Brazilian street children reported in 1998 that 33 per cent of those between the ages of 9 and 11 and 77 per cent of those between the ages of 15 and 18 were heavy users of alcohol (Noto et al, 1998). A 1989 national sample of Canadian 'street youths' found that about 88 per cent drank alcohol, while 9 per cent reported drinking daily (McKenzie et al. 1997).

It is also the case that national drinking cultures change. Recent findings have suggested that this pattern – earlier initiated, frequent, low quantity, low problems alcohol use by young people in Mediterranean countries; older initiated, less frequent, higher quantity, higher problems use in Scandinavian countries, with the UK being somewhere in the middle of these two patterns – is changing. The data cited at the very start of this review on the levels of alcohol consumption by young people within the UK show the strong rise in consumption levels. Hibell et al (2004) in reporting the third phase of the European School Survey Project on Alcohol and other Drugs (ESPAD), which has every 4 years since 1995 examined drinking among

representative samples of 15–16 year olds in a large number of European countries, shows how drinking by UK teenagers has altered much more drastically than in other European countries. Hibell et al (2004) show that, at the time of the 2003 survey, 29 per cent of UK girls and 26 per cent of UK boys had 'binged' three times or more in the past 30 days (where a 'binge' was defined as five or more drinks in a row). Hibell et al also showed that UK teenagers were the third most likely to 'binge drink' (out of the 35 European countries surveyed), with the other high bingeing countries being Ireland, the Isle of Man, the Netherlands, Malta, Sweden, Denmark and Norway. Historically, national culture also determined the relative likelihood of women and girls drinking and getting drunk, with rates for males far exceeding rates for females. This too is changing in the UK, where Hibell et al (2004) showed that, only in the UK, Ireland and the Isle of Man, teenage girls were more likely than teenage boys to have consumed alcohol in binges (in the 2007 survey, the only countries where this occurred were the UK, Norway, Sweden and Iceland, Hibell et al, 2009).

As well as national differences, there are also regional ones. There are significant differences in terms of drinking patterns and quantities within different English regions, with more regular drinkers in the South East of England, where 29 per cent of males and 19 per cent of females consume alcohol on five or more days a week, and the lowest proportions of daily drinkers in the North East for males and females and London for females (Deacon et al, 2007). Conversely, although decreasing slightly in recent years, a greater proportion of the adult population regularly visits a pub or bar in the North of England than in the South, and binge drinking (heavy single occasion drinking) among adults in England is more prevalent in Yorkshire and the Humber, the North West and the North East of England than in other regions. (Deacon et al, 2007; Prime Minister's Strategy Unit, 2003). Patterns of harmful or hazardous drinking in males (more than 21 units per week) reveal that between 1994–96 and 2000–02 levels have increased across many areas of England. Two-thirds of Strategic Health Authorities (mostly in the North of England) saw increases in the proportion of males drinking to harmful or hazardous levels. The greatest increases were seen in Leicestershire, Northamptonshire and Rutland (25 per cent), North and East Yorkshire and Northern Lincolnshire (19 per cent) and South West Peninsula (19 per cent). While northern areas saw increases, many areas in the South saw reductions in the proportion of males drinking to harmful or hazardous levels. The areas that saw the

largest decreases were North East London (by 14 per cent), South East London (by 13 per cent) and Bedfordshire and Hertfordshire (by 8 per cent) (Deacon et al, 2007). This is a clear example of the widening health gap between the north and south.

Over the past decade, these regional differences in drinking patterns have further increased, and there are very evident variations between regions across nearly all indicators, with visits to a pub/bar and binge, hazardous and harmful drinking, life lost, rates of mortality, admission to hospital, incapacity due to 'alcoholism', all showing much higher levels in the more deprived regions of England compared to the more affluent regions. For some indicators, the gap between regions is widening, thereby increasing health inequalities related to alcohol use. So, for example, months of life lost and mortality attributable to alcohol are typically increasing in the North East, North West and Yorkshire and the Humber, but decreasing or remaining static in the East of England, London and the South East. All regions show an increase in rates of hospital admission but the increases are greater in the North East and North West for both males and females than in other regions. The next highest increases in rates of admission are in London, the South West and the South East, with by far the lowest increases in the East of England and the East Midlands; at a sub-regional level, changes in binge drinking, in females in particular, show continuing increases in the north. All areas that showed a decrease between 1998–2000 and 2003–05 were in the south, especially in London (Deacon et al, 2007).

In many ways these findings about changing national and regional drinking patterns are very important. It used to be the case that young people's drinking followed that of their parents' generation, and that of the general culture. Due to the processes of socialisation discussed above, young people grew up with knowledge, attitudes and intentions about their future alcohol use which related to the dominant ways in which drinking was represented within the culture. As Newburn and Shiner (2001) suggest, many young people in the UK commence their drinking at home, under supervision, and then, as they get older and more independent, they have to learn how to drink independently: they have to learn for themselves how to manage their alcohol consumption appropriately. What these young people do when they commence their independent drinking is to learn how to drink in a way that matches their representations of what 'normal' drinking is, in their culture. In the past, this process

enabled drinking cultures to be transferred from generation to generation: young people in France or Italy learned that alcohol is consumed with a meal, their compatriots in Scandinavia learned that alcohol is consumed on a 'night out' where people get very drunk, etc. The process of learning to drink independently is one of learning how to drink in these culturally prescribed ways.

The changes occurring in young people's drinking, then, in the UK, but also elsewhere, represent a significant change in this process. Here, young people are not attempting to learn how to drink like their parents and by extension, *in the way that their culture historically has prescribed*. Instead, they seem to be developing *a more globalised view of drinking*, which mirrors the globalisation of youth culture, fuelled by common media (the marketing of TV programmes and films worldwide, globalisation of music, etc) and an Internet which has few cultural and national barriers. This, coupled with the increasing globalisation of alcohol advertising and marketing as discussed in a previous section above, means that many young people are modelling their drinking behaviour *not* on their parental or cultural stereotypes, but on a view of heavy drinking which is not rooted within their own culture.

If such a theory were to be correct, we should expect to see rises in heavy drinking and in bingeing across many countries, and a trend towards globalised drinks and brands and away from more traditional beverages. In fact, both of these are happening. Although alcohol use is rising faster in some countries than others, the ESAPD studies (Hibell et al, 2004, 2009) have shown that in almost all of the EU countries for which we have repeated data, the proportion of 15-year-olds drinking has risen, alongside the proportions of those drinking heavily and those bingeing. Similarly, it is the case that many young people across Europe no longer drink the beverages traditional with their country or region (wine in France, ale in the UK, spirits in Scandinavia) but increasingly drink bottled lagers, and alcopops and their successors (premixed spirit-based drinks). This is not true in all countries, and there has been some reduction in the very heavy drinking countries (Denmark, Greece and the United Kingdom, Hibell et al, 2004). For example, research in the UK published in 2007 by OFCOM and the Advertising Standards Authority (ASA), found that both the proportion of 11 to 13-year-olds who ha never drunk alcohol had increased from 31 per cent in 2005 to 46 per cent in 2007, and that alcopops had declined in popularity:

between 2005 and 2007, there had been an 11 per cent drop across all ages of those who claimed to have drunk alcopops in the last six months. There clearly is some relationship between this globalisation of drinking culture and other more national factors, which explains why, even in a more globalised environment, there are still national differences; some of these factors are explored below.

Importantly however, this more globalised view of drinking (which constitutes a view, growing across much of Europe and North America, of what constitutes 'normal drinking') itself fuels rising levels of drinking, at least partly because young people overestimate the amount that others drink. For example, Perkins (2007) surveyed over 5,000 students across Canada aged between 18 and 25 and found that, regardless of the actual drinking norm on each campus, students most commonly overestimated the alcohol consumption norms (both quantity and frequency levels) in every instance. Students' perception of their campus drinking norm was the strongest predictor of the amount of alcohol personally consumed, in comparison with the influence of all demographic variables. Perception of the norm was also a much stronger predictor of personal use than the actual campus norm for consumption on each campus or the actual norm for compliance with campus regulations. Among students who personally abstained or consumed lightly, misperceptions of the student drinking norms contributed to alienation from campus life. Perkins concluded that his data extends the evidence that peer drinking norms are grossly misperceived and that these misperceptions produce a highly detrimental 'reign of error' in the lives of college students. Similar findings have emerged from UK studies too (McAlaney and McMahon, 2007). This overestimation of others' drinking is not confined to college students. As another example, a recent nationwide (UK) survey carried out with 1,491 9–11 year olds asked the children about their perceptions of adult drinking (http://www.lifeeducation.org.uk/newsletter/newsindex.php?action=publicarticle&id=372). Almost a third of the children (30 per cent) thought that for adults who drink wine, drinking five or more glasses of wine in one night is normal drinking behaviour. Over a quarter of the children (27 per cent) also think that people who drink beer would normally drink four pints or six bottles in an evening. If one third of children aged 9-11 believe that normal adult drinking constitutes drinking at levels that are categorised as binge levels, it should not be surprising that so many young people also do the same when they start drinking in more 'adult' ways.

Relationship between country and other variables

There is also a relationship between national cultural determinants and the family structure and process variables examined earlier in this review. Ledoux et al (2002) compared samples of 15–16-year-olds from the UK and France on their usage of alcohol, tobacco and illicit drugs and related those to a range of 'family variables' within the two countries. Compared to UK adolescents, French adolescents showed a slightly higher rate of cigarette smoking, were almost identical on cannabis use, rather lower on the use of other illicit drugs and very considerably lower on alcohol use. They found that family variables were related to substance use, but generally the family factors had similar effects across the two countries, implying that they had more influence than did the national differences. In both countries, children from non-intact families, those who were not satisfied with their relationships with their father or mother, and those who were less closely monitored, were more likely to be heavy substance users than other students. Logistic regressions showed that parental knowledge of the whereabouts of their offspring on Saturday evenings was the strongest factor, in both countries. The main national difference was that paternal relationships are highly significant among French young people, and much less so in the UK.

Beyers et al (2004) also undertook a two-country comparison, this time between Australia and the United States. They wished to compare risk and protective factors that influence youth substance use, in the light of the different national cultures and policy orientations toward substance use. Cross-sectional survey data were collected from independent samples of adolescents in the states of Maine (n = 16,861; 53 per cent female, 7 per cent non-White) and Oregon (n = 15,542; 51 per cent female, 24 per cent non-White) in the United States and Victoria in Australia (n = 8,442; 54 per cent female, 11 per cent non-White), and 33 risk and protective factors were examined, including those relating to the community, school, family, and peer/individual. They found that more adolescents in Victoria reported using cigarettes and alcohol, whereas more of the US adolescents reported using marijuana. Exposure to risk and protective factors was generally similar in the cross-national samples, although some differences were found (adolescents in Maine and Oregon perceived handguns to be more readily available, reported more participation in

religious activities, and were higher in sensation-seeking and social skills; and adolescents in Victoria had more favourable attitudes toward drug use and reported community norms and parental attitudes more favourable to drug use). Again, those of the risk and protective factors which were associated with substance use, were associated to a similar degree in Victoria, Maine, and Oregon. However, among adolescents in Maine and Oregon peer/individual risk and protective factors associated with social detachment were more strongly related to substance use, and among adolescents in Victoria, family protective factors were less strongly related to alcohol use.

It is possible to conclude from these studies that, although there are strong national cultural differences in when, how and how much young people should drink, and although there is an increasing globalisation of young people's drinking behaviour, the influence on these behaviours of family and peer factors is generally similar.

Ethnicity / race and its relationship with young people's attitudes and behaviour towards drinking

In the same way that there are national cultural patterns, so someone's race or ethnic identity can also determine what the collective norms are for drinking behaviour.

Drinking

There has been a large amount of research in the USA examining the role of ethnic group on both drinking behaviour and on how the various family, peer and media factors described above are influenced by ethnic grouping (see next sub-section). In brief, differences in alcohol use have been found among various racial/ethnic groups in the USA, with the highest percentage of users of alcohol among teenagers being Caucasians and Native Americans, followed closely by Hispanics, and the lowest percentage of users of alcohol among teenagers being reported by African American and Asian American teenagers. These findings have been replicated in national and state surveys and across different historical time periods. Hence, in the USA, not all adolescents are equally likely to consume alcohol during the teenage years, as sub-cultural practices (such as beliefs about the negative impact of alcohol use, religious training, dedication to school/career aspirations) among some subgroups may

influence the likelihood of consuming alcohol during this period of development. The brief review that follows will primarily look at research from the UK. Unfortunately, there has not been a great deal of this!

Purser et al (2001) carried out a survey of 1,684 second or subsequent generation Black and Asian men and women (Black: African, African-Caribbean and Black British; Asian: Indian Hindu, Indian Sikh, Bengali, Pakistani). Respondents in this survey were young, 18–40 years of age, with the majority being under 35. Purser et al (2001) found that a high proportion of the total sample were non-drinkers, with 62 per cent having consumed no alcohol in the previous year. They also found some large differences between groups, showing that 87 per cent of Black men and 80 per cent of Black women were drinkers, that most Sikh men (71 per cent) had consumed alcohol, and that rates of heavy or very heavy drinking were quite high for Black (49 per cent) and Indian Sikh men (30 per cent), whereas rates of heavy or very heavy drinking for the remaining Indian sub-continent groups (Asian: Indian Hindu, Bengali, Pakistani) were very low (6, 4 and 7 per cent respectively).

One problem with many studies where ethnicity is one of the variables looked at is that there are many different ethnic groups, and these differences are frequently obscured in research, which often pools all of these into one 'minority ethnic' grouping. In part, this is because in many studies, only small numbers of respondents are from any minority ethnic group. Even in the Purser et al (2001) study, although they divided the Indian subcontinent population into four (Indian Hindu, Indian Sikh, Bengali, Pakistani [excluding Indian Muslim for some reason]) they did not divide the African Black group at all: an entire continent, with potentially huge variability in drinking norms and cultures as well as in religion, is reduced to a single category.

The complexities of research into ethnicity become greater when considering the frequent confusion between ethnicity and race. Hence many studies employ 'ethnic' categories that include Hispanic, non-Hispanic White, Black or Asian, which on the one hand are divisions based on racial characteristics, and on the other hand are confusing in that 'Asian' is a term used differently in different countries. In the UK, it normally does not mean people from China, Eastern Russia, Vietnam, Hong Kong,

etc, but is generally reserved for those from the Indian sub-continent (India, Pakistan, Bangladesh, Sri Lanka).

Race is a category defined by physical characteristics possessed by people, and utilises traits that include skin colour, eye colour, nose shape, hair type, etc. Conversely, ethnicity or ethnic identity can be understood as '*persons who share the same distinct culture or who are descendants of those who have shared a distinct culture and who identify with their ancestors, or their culture or group*' (Isajiw, 1999, p. 19). Racial categories are far from homogeneous and understanding substance use patterns around such a framework is inherently flawed: the within-group differences, in many instances, may exceed between-group variations. Asbridge et al (2005) argue that analytical studies, whenever possible, should employ ethnicity rather than race.

Similar problems beset some of the small amount of research into ethnic variations in young people's drinking in the UK. So, for example, Harrington (2000) reported that 'ethnic minority' teenagers were less likely than Whites to say they drink alcohol, or drink frequently. The majority of 'non-Whites' aged 12–17 had either never drunk alcohol or had not done so in the past year compared with only 20 per cent of whites. In addition, only one in 20 'non-Whites' aged 12–17 were frequent drinkers in comparison with one in four Whites. Measham (1996) on the other hand reported that while White and 'Black' respondents appeared to have similar drinking patterns, both drank more heavily than 'Asians', in her sample from the north-east of England.

Stillwell et al (2003) looked across a number of separate ethnic groups. They looked at alcohol use by 609 14–16-year-olds from four different ethnic groups, comparing consumption, intoxication and negative consequences across young people from White English, White Irish, Black Caribbean or Black African ethnic origin. They found that Black African males, and males and females from the two White ethnic groups, reported drinking above levels recommended (for adults) by the Department of Health. Among the recent drinkers, over half of the White Irish and White English groups and over a quarter of Black Caribbean and Black African groups had been intoxicated in the 90 days before interview. Approximately three-quarters of the White English and White Irish recent drinkers, but only a half of Black Caribbean and Black African recent drinkers had experienced a negative drinking-related

consequence during the last year. The authors suggest that while young people of White English or White Irish ethnic origin are more likely to drink excessively and experience negative consequences from their drinking than Black African and Black Caribbean youth, a substantial minority of Black African and Black Caribbean youth also experience alcohol-related problems.

The suggestion from Measham (1996) that 'Asians' drink less heavily has received corroboration from a number of studies: Best et al (2001), Denscombe (1995), Karlsen et al (1998) and Rodham et al (2005).

Best et al (2001) examined stages of drinking and smoking careers and transitions from initiation to regular use among 1,777 adolescents aged 11–14 from south-west London, as a function of ethnic status and gender. They found that for both smoking and drinking, White children were more likely to have ever smoked tobacco and drunk alcohol, and were also more likely to progress from initiation to regular use than were either Black or Asian children. Asian children reported the latest onset and the lowest prevalence rates for both drinking and smoking.

Denscombe looked at the relationship of ethnic group to alcohol consumption in over 1,000 15–16-year-olds in Leicestershire, England. They found that 'South Asians' (meaning those from the Indian sub-continent) tended to hold less favourable attitudes to drinking alcohol than their White counterparts and reported a far lower frequency of alcohol consumption. 94 per cent of South Asians described themselves as non-drinkers, compared with 38 per cent of Whites. Similarly, 2 per cent of South Asians and 25 per cent of Whites reported drinking alcohol twice a week or more. They also examined the influence of their respondents' religious affiliation, to see if there were differences within the broader ethnic groups which would be disguised by aggregating the results under these two headings. Within the 'South Asian' group, although some differences in attitudes emerged between Hindus, Sikhs and Muslims (with Muslims exhibiting particular sensitivity to their religion's proscription of drinking alcohol), the reported level of drinking by the Hindus and Sikhs was not much greater than that of the Muslims. The three groups tended to have a similar frequency of alcohol consumption which was markedly lower than that reported by the White 15–16-year-olds.

Karlsen et al (1998) undertook semi-structured interviews with 132 12–13 year olds from four ethnic groups attending secondary schools in two inner London boroughs, who all underwent a follow-up interview approximately 17 months later. They found that familial, religious and peer influence closely correlated with ethnicity, with Bangladeshi young people showing lower levels of peer, and higher levels of religious and familial, involvement and lower levels of substance use, including drinking. White young people reported higher levels of peer, lower levels of religious and familial involvement, and a higher level of substance use. Black African and Black Caribbean young people lay between the two extremes.

Rodham et al (2005) also looked at the prevalence of drinking (as well as of smoking and drug use) in a representative sample of 6,020 15 and 16-year-olds from 41 schools across the lower Midlands of England (Northamptonshire, Birmingham and Oxfordshire; data collected in 2000–01). They reported ethnic (and gender) differences in self-reported substance use, including, for alcohol, that 'Asian', Black and 'other' boys and Black and 'Asian' girls were less likely to report drinking during a typical week compared to White participants. 60 per cent of White boys and 49 per cent of White girls reported drinking two or more drinks in a typical week, and 59 per cent of both White boys and girls reported getting drunk more than once in the previous year. The percentages for Black boys and girls, and Asian boys and girls for a typical week are 42, 23, 12 and 7 per cent respectively, and for drunkenness over the past year are 44, 30, 11 and 9 per cent.

Possibly the most detailed study of adolescents from various minority ethnic groups has been undertaken by Stansfeld et al (2003; Bhui et al 2005a,b,; Clark et al, 2007; Jayakody et al, 2006; Stansfeld et al, 2004; Viner et al, 2006) in the RELACHS (Research with East London Adolescents: Community Health Survey) project. This was a unique school-based epidemiological study of 2,800 adolescents (aged 11–12 and 13–14) in East London that provided insights into many aspects of health and well-being of inner urban British adolescents. The young people who participated in RELACHS came from three boroughs of East London: Newham, Tower Hamlets and Hackney, all of which are very deprived by average UK standards. Around 79 per cent of the young people in the cohort were from ethnic minorities, predominantly

Bangladeshi (25 per cent), Black African (8 per cent), Indian (9 per cent), Pakistani (7 per cent) or Black Caribbean (6 per cent), with small numbers of other groups such as Somali, Chinese/Vietnamese, and various 'mixed' categories, etc. 66 per cent of the sample lived in 2-parent families. 37 per cent of the sample (49 per cent in Tower Hamlets) had no parent who was employed in their households.

RELACHS therefore provided a fascinating and unique picture of life and health for young people in London's multi-cultural inner city. A further positive element of RELACHS is that it was a longitudinal study, with phase 1 being conducted from January to June 2001 (when the participants were aged 11-12) and examining mental and physical health (including alcohol), life expectations and social and environmental issues; and phase 2 being conducted two years later (when the participants were aged 13-14), from January to June 2003, resurveying the same cohort of pupils. In phase 2 additional information was collected on protective and risk factors for sexual behaviours and attitudes linked with teenage pregnancy. As well as collecting questionnaire data, each child also had their height, weight, bioelectrical impedance and pulse rate measured, and there was also an in-depth qualitative sub-study conducted in sub-samples purposively sampled to include variation by ethnicity and gender. In 2005 data were collected for the third phase of RELACHS where the group of participants from phases 1 and 2, now aged 15–16 years, were followed up. In phase 3, the focus of RELACHS was expanded to explore which school, neighbourhood and family level factors promote adolescent health. They collected new data on neighbourhood, school and family level factors that could help explain the associations which they had demonstrated in this cohort. Analysis of phase 1 and 2 RELACHS data had illustrated the importance of cultural and family factors on mental and physical health, such as ethnicity and social support. The school level data, together with extended cross-sectional and longitudinal measures of neighbourhood, family, socio-economic and cultural determinants make this the most comprehensive UK study of adolescents' mental and physical health to date. By examining adolescent health, within a life course approach, the authors hope that it will be possible to predict adolescent health, as well as provide data which will inform future interventions to reduce social inequalities for adolescent health.

82 per cent of the 11–12 year olds and 66 per cent of the 13–14 year olds reported that they had never had a proper alcoholic drink. 15 per cent of the younger age group and 26 per cent of the older one had had an alcoholic drink, but not in the past week, and 3 per cent and 7 per cent respectively had drank alcohol in the past week. The proportions, especially for the older age group, of those drinking in the past week are substantially lower than national levels. 29.5 per cent of the regular drinkers were also regular smokers; 19 per cent of the drinkers were also regular drug users. They also report that the qualitative study found that there were no differences in risk taking by ethnic group. For example, Bangladeshi boys (not girls) were as likely to drink alcohol and take drugs as their peers. However, they do not report the alcohol data by ethnic group. Viner et al (2006) come the closest to examining these data, where they look at health risk behaviour (drinking, smoking, drug use) by ethnicity. They report that the highest prevalence of reporting one risky behaviour out of the three was from Black Caribbean (18 per cent boys, 17 per cent girls), followed by White British (15 per cent, 11 per cent), Asian Indian (15 per cent, 7 per cent), Mixed Race (14 per cent, 13 per cent), Bangladeshi (11 per cent, 9 per cent), and Black British (9 per cent, 12 per cent), with all the other ethnic groups ranging between 9 per cent and 8 per cent for boys, and 9 per cent and 7 per cent for girls. A decreased risk of being a regular drinker was associated with Bangladeshi, Pakistani, Indian, Caucasian other, Black African, and Black British ethnicity. The highest associations for regular drinking were with being Black Caribbean, and of mixed race. Their multivariate analyses showed that factors independently associated with lower risk of regular drinking were birth outside the United Kingdom, Muslim religion, and higher family social support. They state that they found from their multivariate analyses that ethnicity appeared not to be a factor independent of religion and country of birth in predicting drinking risk (although they report that it was for predicting smoking risk).

Similar ethnic differences have been found in illicit drug use too: Jayakody et al (2006), also as part of the RELACHS study outlined above, looked at illicit and traditional drug use among ethnic minority adolescents in East London. 2,789 male and female pupils aged 11–14-years-old who went to school in East London completed confidential questionnaires. In total, 11 per cent reported having ever tried illicit drugs with 7 per cent reporting ever using cannabis. Compared with White British adolescents, cannabis use in the previous month was significantly higher

amongst Black Caribbean adolescents. Lifetime cannabis use was significantly higher amongst Black Caribbean and mixed ethnicity young people, but was lower amongst Bangladeshi, Indian and Pakistani adolescents. Living in UK for five years or less markedly reduced the risk of lifetime and recent cannabis use when controlled for ethnicity and social class. Glue or solvent use was reported in 3 per cent of adolescents overall, with use significantly higher amongst Bangladeshi young people. Lifetime paan use was reported by 14 per cent of the sample, and was almost completely confined to South Asian or mixed ethnicities. Jayakody et al make the point that significant ethnic differences in illicit drug use were found in the study population, and that significant differences were found between ethnic groups often identified as 'Black'.

In summary, the limited amount of research into ethnic variation in drinking behaviour shows that, among young adults (18–40), Black men and women and Sikh men drank at not dissimilar levels to White Britons, whereas other Indian groups, and those from Bengali and Pakistani drank at far lower levels.

The limited amount of research into ethnic variation in drinking attitudes and behaviour among adolescents suggests that some non-White groups were less likely than Whites to drink alcohol, and to drink frequently. There is some evidence to suggest that Black African and Black Caribbean young people drink at somewhat reduced levels compared to White, but that those from the Indian sub-continent, especially from the more Muslim areas such as Pakistan, Bangladesh, and Bengal, but also including Hindu and Sikh young people, drink at a very much reduced rate and hold much less favourable attitudes to drinking alcohol than their White counterparts. Although almost all work supports the finding that those from the Indian sub-continent drink the least and have the least favourable attitudes to drinking, there is also conflicting evidence, suggesting that in some cohorts, Black Caribbean, and those of mixed race (although there seems to be even less research with this group than with other 'ethnic minorities'), seem at highest risk of regular drinking. It also seems likely that familial, religious and peer influence closely correlated with ethnicity.

One problem with many studies where ethnicity is one of the variables looked at is that there are many different ethnic groups, and these differences are frequently

obscured in research, which often pools all of these into one or a small number of 'minority ethnic' groupings: entire continents or sub-continents, with potentially huge variability in drinking norms and cultures as well as in religion, are reduced to a single category.

How the various family, peer and media factors described above are influenced by ethnic grouping

Considerable research into this question has been undertaken, but all of it (other than the finding reported above by Viner et al, 2006, of higher family social support being independently associated with lower risk of regular drinking) is from the USA (eg Bray et al, 2001; DiClemente et al, 2001; Clinton-Sherrod et al, 2005; Foley et al, 2004; Griffin et al, 2000; Heath et al, 1999; Li et al, 2000a,b; Pomery et al, 2005; Rai et al, 2003; Sale et al, 2005). In the absence of any UK work, these findings will be briefly described.

Bray et al (2001) looked at developmental, family, and ethnic influences on adolescent alcohol usage, over a 3-year longitudinal study of 6,522 non-Hispanic White, Mexican American, and African American adolescents aged 11–14, who were surveyed annually for the three years. They found that increasing separation (emotional detachment from the family) and family conflict were related to increases in alcohol use, and intergenerational individuation (development of autonomy while maintaining intimacy and connection to the family) and family cohesion were related to decreases in alcohol use. They showed that White and Mexican American adolescents had a faster rate of increase in alcohol use than did African American youth. Importantly, they found that the family process variables (separation, family conflict, intergenerational individuation, cohesion) all influenced adolescent alcohol use from different ethnic groups in very similar ways, implying that although there are significant cultural and ethnic differences in alcohol use, these are influenced similarly by the same family factors explored previously in this review.

Clinton-Sherrod et al (2005) also looked at the role of psychosocial factors in the transition to substance use in a sample of 556 urban public schools, primarily African American sixth graders (aged 11–12). As found in other research, there were disturbingly high rates of substance use among these young people: 51 per cent had

tried alcohol, and 40 per cent had tried cigarettes by the beginning of sixth grade (age 11–12). They found that students who did not use substances by the end of sixth grade consistently had higher scores on protective factors than did students who were already using substances at the beginning of sixth grade. Non-users of alcohol and cigarettes had better decision-making skills, higher self-efficacy, lower peer pressure susceptibility, and more positive attitudes about school than did early users at both the beginning and end of sixth grade. Students who began to use alcohol during the school year showed declines on all four psychosocial variables such that they started the school year with scores close to those of non-users but ended the school year with scores close to those of early users. What is interesting is that these authors find the same protective factors in this urban, primarily African American sample that are typical in suburban, White samples, implying again that these influences may also be generalisable.

DiClemente et al (2001) looked at the association between parental monitoring and adolescents' risk behaviours in a sample of 522 Black females residing in low-income neighbourhoods, between the ages of 14 and 18 years, who were sexually active in the previous 6 months. The risk behaviours they looked at were alcohol use, marijuana use, antisocial behaviour, sexually transmitted diseases, sexual behaviours, and violence. In logistic regression analyses adolescents perceiving less parental monitoring were more likely to have a history of alcohol use and greater alcohol consumption in the past 30 days; a history of marijuana use and use marijuana more often in the past 30 days; test positive for a sexually transmitted disease, report not using a condom at last sexual intercourse, have multiple sexual partners in the past 6 months, have risky sex partners, have a new sex partner in the past 30 days, not use any contraception during the last sexual intercourse episode, and have a history of arrest. The authors conclude that there is a consistent pattern of health risk behaviours and adverse biological outcomes associated with less perceived parental monitoring.

Foley et al (2004) were interested in whether there were differences in adults' approval of adolescents' alcohol use among White, Black, and Latino youth; and to see what the effects were of approval on most recent alcohol consumption, past 30-day use and binge drinking. They undertook a cross-sectional telephone survey of 6,245 adolescents aged 16–20 from 242 communities across the USA, with the survey

assessing adult approval (if they provided alcohol, drank with the young person, etc), perceived availability of alcohol, underage alcohol use, and problems related to underage drinking. They found that perceived consequences, parent and adult-relative provision of alcohol, and drinking with a parent were protective of underage drinking. Providing alcohol at a party, however, was associated with a two-fold increase in past 30-day use and binge drinking. As with the other studies above, they found minimal differences on adults' approval across the three racial/ethnic groups.

Griffin et al (2000) also looked at ethnic (and gender) differences in psychosocial risk, protection, and adolescent alcohol use, examining whether cumulative psychosocial risk and protection measured in the 7th grade (age 12–13) predicted alcohol use in the 9th grade (age 14–15) across ethnically diverse samples of adolescents. Participants consisted of Black (n = 775) and Hispanic (n = 467) inner-city youth and White suburban youth (n = 708). They found that prevalence rates for alcohol use and risk/protection varied more widely based on ethnic group compared to gender. Black youth reported the fewest risk factors and lowest levels of alcohol use, White youth reported the most risk factors and highest levels of alcohol use, with Hispanic youth reporting the fewest protective factors and intermediate levels of alcohol use. Despite these differences, structural equation modelling indicated that a latent factor consisting of cumulative risk, protection, and their interaction significantly predicted later alcohol use for the combined sample as well as for each ethnic/ gender subgroup. However, the proportion of variance explained in alcohol use varied across subgroups, and moderator analyses indicated that protection (variables such as prior school success, negative drinking expectancies, few friends who drink, having low normative expectations of peer drinking, and of adult drinking) significantly buffered the effects of risk differentially across subgroups, with the strongest protective effects being observed among Black inner-city youth. For example, they found that for Black girls, increases in risk were associated with almost no increase in alcohol use at the higher levels of protection, but at low levels of protection, higher levels of risk were more strongly associated with alcohol use. Thus protection markedly buffered the influence of high risk on alcohol use among Black girls. A similar effect was observed for Black boys and Hispanic boys. In contrast, for the other subgroups (White girls and boys, and Hispanic girls) there are strong main effects for risk and protection, but no interaction effects.

Heath et al (1999) looked at both ethnicity and religion as providing resilience against teenage alcohol use and smoking. They conducted telephone interviews with 1,687 female like-sex twin pairs aged 13–20 (including 220 pairs from minority ethnic groups), as well as with one or both parents of twins aged 11–20 (n = 2,111 families). They also followed all the twins up at one year, and all of the parents at two years. They found that, despite higher levels of exposure to family, school and neighbourhood environmental adversities, African American adolescents were less likely to become teenage drinkers or smokers. However, they found that all of the variance explained occurred through the religious variables (see next section, on religion): controlling for religious affiliation, involvement and values removed the ethnic difference in alcohol use. They argue that their data confirm the finding of a strong protective effect of adolescent religious involvement and values, which then contributes to lower rates of African American alcohol use.

Li et al (2000a) examined perceived parental monitoring and health risk behaviours among urban low-income African American children and adolescents, using three cross-sectional surveys conducted in 1992 (n = 455), 1994 (n = 355), and 1996 (n = 349). Respondents aged 9–17 years were recruited from low-income urban areas including public housing communities and associated recreation centres. They found that low levels of perceived parental monitoring were associated with participation in several health risk behaviours, including substance/drug use, sexual behaviour, drug trafficking, school truancy, and violent behaviours. Females perceived themselves to be more monitored than did males, and in general, perceived parental monitoring tended to decrease with advancing age of the youth. They conclude that the strong inverse correlation between perceived parental monitoring and adolescent risk behaviour suggests that parental monitoring initiatives may be an effective intervention tool.

Li et al (2000b) described a further study which extends the previous one, examining the impact of perceived parental monitoring on adolescent risk behaviour over four years, looking in particular at the stability of perceived parental monitoring over time and at its long-term effect on health risk behaviours among low-income, urban African American children and adolescents. This study used a prospective,

longitudinal four year follow-up design, having at baseline 383 African American young people aged 9–15 years. They measured perceived parental monitoring and a number of self-reported health risk behaviours (unprotected sex, drug use, and drug trafficking) at baseline and regular intervals over the subsequent four years. They found that perception of being monitored demonstrated consistency over time, and that parental monitoring was inversely correlated with all three targeted risk behaviours cross-sectionally and prospectively. They argue that these data support the long-term effect of perceived parental monitoring on risk behaviours among urban, low-income African American children and adolescents. Coupled with evidence suggesting that directed interventions might be able to increase parental monitoring, they suggest that this study provides a solid platform for reinforcing the importance of parental monitoring and directing intervention efforts at strengthening parental monitoring to reduce adolescent risk behaviours.

Pomery et al (2005) looked at parental, peer, and older siblings' contributions to adolescents' substance use, using longitudinal data over two time periods from 225 African American families. They found large effects for the influences of older siblings (if older siblings were more willing to drink or use substances at Time 1, this predicted the target adolescents' use at Time 2 (T2)) and also showed that older siblings' willingness buffered the impact of peer use on targets' later use: low sibling willingness to use was associated with less evidence of peer influence. These results again are similar to those from White USA families.

Rai et al (2003) also looked at perceived parental monitoring, but examined the relative influences of that versus perceived peer involvement, on adolescent risk behaviours. They looked at six cross-sectional data sets involving 1,279 low income urban African American young people aged 13–16. Because these data sets had been collected over a decade of research in one urban area, they were also able to examine the consistency of the impact of these two influences over time. They looked at self-reported behaviours, and perceptions of parental monitoring and peer risk-involvement, and found (unsurprisingly) that there was a rapid increase in sexual activity and substance use behaviours during mid-adolescence. They found that parental monitoring had a protective influence on substance use behaviours and

sexual activity, but had no impact on condom use or drug trafficking. On the other hand, peer involvement influenced all the risk behaviours they looked at. They found that the influences overall did not statistically change over time, implying that these influences have remained relatively constant over time. They concluded that, despite the marked increase in risk behaviours during mid-adolescence, parental monitoring and peer involvement both influenced adolescent behaviours across each cohort.

Sale et al (2005) examined family protection and the prevention of alcohol use among Hispanic youth at high risk. Starting in 1995, the Center for Substance Abuse Prevention conducted the National cross-site evaluation of High Risk Youth Programs, a 5-year drug and alcohol prevention study with a sample of approximately 10,500 young people, of whom nearly 3,000 were Hispanic. The young people were surveyed regarding their alcohol use patterns, and risk and protective factors, with several measures of family relationships, including family connectedness, family supervision, and parental attitudes toward their child's alcohol use. They found that family factors were highly linked to alcohol use among Hispanics, particularly among Hispanic females. Longitudinal growth curve analyses indicate that improving the connections that young Hispanic females have to their parents can have positive long-term effects on delaying or reducing their alcohol use.

Similar work has also been undertaken on smoking and ethnicity. For example, Asbridge et al (2005) looked at the relationship between ethnic identity and tobacco use, and examined the mediating effects of peer and sibling smoking and acculturation, in a cross-sectional survey of 3,400 adolescents from Toronto, Canada. They found that that smoking varied among adolescents of differing ethnic identities. Adolescents of western European, eastern European and southern European ethnicity were considerably *less* likely to be *non-smokers*, while Chinese, South Asian and East Indian (Pakistan, Sri Lanka, India) and West Indian youth were *more* likely to be *non-smokers*. The discrepancies in rates of non-smoking among western European and South Asian and East Indian adolescents were explained by a combination of peer and sibling smoking and acculturation; among southern European and eastern European youth via peer and sibling smoking; and by neither peer and sibling smoking nor acculturation for Chinese and West Indian youth. The authors conclude that disparities in tobacco use among certain ethnic groups can be explained by peer and

sibling smoking and acculturation; while for other ethnic groups, knowledge of the processes that account for differences in tobacco use remains less clear.

Alexander et al (1999) undertook a qualitative interview and focus group study to look at first smoking experiences among ethnically diverse adolescents (African American, European American, Hispanic, Native American), varied by gender and urban versus rural. They found that their results both amplified and reinforced conclusions about peer and family influences on adolescent smoking initiation reported in quantitative studies of teen smoking. Within the broader themes of peers and family, several important sub-themes emerged. The study findings suggest that peer influence can be characterised as either or both of social conformity and social acceptance. Males were more likely than females to describe experiences involving peers exerting strong messages to conform to smoking behaviours. Roles played by family members in the initiation process were complex, and included those of initiator, prompter, accomplice, and inadvertent source of cigarettes. European American and Hispanic girls provided descriptions of parents/family members as instigators of their first smoking experience. Hispanic adolescents described instances in which family members prompted cigarette use at a young age by encouraging the young person to light the adult's cigarette. The authors argue that, in order to design effective cigarette smoking prevention programmes for adolescents, it is important to understand the meaning of smoking behaviours for adolescents from different ethnic and social backgrounds.

Scragg and Laugesen (2007) examined the influence of smoking by family and best friend on adolescent tobacco smoking across different ethnic groups, by looking at a national New Zealand survey of almost 30,000 young people (14,936 females, 14,349 males) aged 14–15. They found that adolescents with both parents smoking had the highest smoking risk compared with those with one or neither parent smoking. However, the relative risk of adolescent daily smoking associated with both parents smoking, compared with neither, varied with ethnicity, being 2.34 in Maori, 2.87 in Pacific Islanders, 4.92 in European/Other, and 11.37 in Asian students, adjusting for age and sex. These values were lower than the adjusted relative risks of daily adolescent smoking associated with having a best friend who smoked, which also differed by ethnic group: 4.18 in Maori, 5.19 in Pacific Island, 10.18 in European

/Other, and 14.35 in Asian students. They also found that adolescent smoking was also positively associated with pocket money amount and living in a home where smoking was allowed, both parental-related factors. Combined exposure to one or more of the following factors – parental smoking, pocket money >$5 per week and smoking in the house – explained 64 per cent of daily adolescent smoking, very similar to the 67 per cent attributable to best friend smoking. It seems clear that parental behaviour is a key determinant of smoking by New Zealand adolescents and explains a similar proportion of daily adolescent smoking to that of peer smoking; and that although both these factors (parental behaviour and peer smoking) apply across ethnic groupings in New Zealand, the risk of smoking varies significantly by which ethnic grouping an adolescent is in.

These studies summarised above demonstrate that, for minority ethnic groups in the USA, many of the same factors identified in the earlier parts of this review are equally important (family factors such as parental monitoring, perceived consequences, maintaining intimacy and connection to the family, family cohesion, family connectedness, family supervision, low sibling willingness to use, parental attitudes toward their child's alcohol use, parent and adult-relative provision of alcohol (for older children), and drinking with a parent (again for older children); individual factors such as better decision-making skills, higher self-efficacy, lower peer pressure susceptibility, more positive attitudes about school, prior school success, negative drinking expectancies, having low normative expectations of peer drinking, and of adult drinking; and peer factors such as having few friends who drink).

It is not the case, however, that all studies show similar effects of family and peer variables with minority ethnic populations as are found with White ones. For example, in their study of antisocial behaviour, Deković et al (2004) looked at the role of family and peer relations across 603 adolescents (318 females and 285 males) from four ethnic groups: 68 per cent were Dutch, 11 per cent were Moroccan, 13 per cent were Turkish and 8 per cent were Surinamese. They assessed antisocial behaviour, quality of parent–adolescent relationship and involvement with deviant peers. The results showed that antisocial behaviour, parent–adolescent relationships, and peer deviance are all significantly correlated (antisocial behaviour is positively correlated with negative parenting quality and with deviant peers, and negatively correlated with

positive parenting quality and adolescent disclosure). However, they found that the magnitude of these findings linking parent–adolescent relationship and peers to antisocial behaviour varied across ethnic groups. The quality of parent–adolescent relations, and involvement with deviant peers, accounted for a significant amount of variance in adolescent antisocial behaviour in each of the ethnic groups. However, the percentage of variance accounted for was much smaller for Surinamese adolescents (23 per cent) than for other the three groups (60, 47, and 67 per cent respectively for Dutch, Moroccan and Turkish adolescents). Generally stronger associations were found in the Dutch sample than in the other three samples. The authors argue that the weaker relations found between parent and peer factors and antisocial behaviour is not likely to be an artefact, as the distribution of all assessed variables were similar in all ethnic groups, and state that, although the immigrant samples were smaller than the Dutch sample, there were still enough respondents within each ethnic group to allow meaningful analyses. These authors suggest that their findings are consistent with the results of other studies reporting a generally lower strength of the associations among the hypothesised predictors of antisocial behaviour in minority groups, but they do not suggest why this should be.

In summary, although almost no research has been published in the UK examining how the various family, peer and media factors described earlier in this review are influenced by ethnic grouping, there has been research from the USA which has looked at this. Although it is problematic to generalise from the USA (where issues of ethnicity are dealt with very differently to the UK and hence the experience of being part of a minority ethnic group will probably be different too) these studies do demonstrate that, for minority ethnic groups in the USA, many of the same family, peer and individual factors identified in the earlier parts of this review are equally important for minority ethnic groups. There is some evidence that the parents of African American children in the USA more frequently speak to their children about alcohol and substance use than Caucasian parents, and establish clear rules for drug use, including contingent consequences for breaking the rules.

Interventions programmes and ethnicity

A number of reviews and studies have looked at the role of ethnicity in intervention programmes.

Taylor et al (2007) undertook a major review for the National Institute of Clinical Excellence (NICE) which sought to identify and evaluate evidence relating to how the social and cultural context in which people live influences the effectiveness of interventions to change health knowledge, attitudes, intentions and behaviours. The research team was requested by NICE to use examples from the fields of smoking, physical activity and healthy eating, and specifically to consider the relevance of life course, gender, income and allied social positioning, ethnicity, place, and other variables highlighted by the literature. Their conclusion with respect to ethnicity was that:

> "*There is a lack of robust research evidence on the extent to which ethnic minorities can benefit from culturally specific health behaviour change interventions, although White et al (1998) and Lawrence et al (2003) found limited evidence that appropriately tailored interventions can have enhanced effectiveness in changing the eating and smoking patterns of people from ethnic minorities*" (p 101).

Mulvihill et al (2005), in their review of the research into the prevention and reduction of alcohol misuse, reach a similar conclusion. They suggest that, from the systematic review and meta-analytic literature, there is a complete lack of evidence on the effectiveness of interventions targeting specific socio-economic, ethnic or vulnerable groups. Furthermore, the interventions identified did not address the differential effectiveness of interventions among these groups, or how the different components affected them. Their recommendations include the need to undertake primary research on carrying out brief interventions to reduce alcohol misuse and evaluating their effectiveness among minority ethnic groups, particularly among Asians and African-Caribbeans, as well as religious ethnic groups such as Sikhs, Hindus and Muslims.

Harrop et al (2006) arrive at a different conclusion, by examining a number of reviews which have looked at resilience and protective factors. They show that evidence on the role of positive racial or ethnic identity as protective against the effects of poverty, racism and discrimination was highlighted in seven of the reviews they examined, with two of these reviews being systematic reviews. One of these

systematic reviews explored studies which looked at the influences of race, ethnicity and poverty on the mental health of children in the US (Samaan, 2000). Study findings demonstrated protective factors against mental illness in ethnic groups who were same SES groups as their White counterparts, leading the author to conclude that buffers against psychological distress exist and function within cultural mechanisms. The other review (Williams et al, 2003) considered evidence from community studies on the relationship between racial/ ethnic discrimination and health. In this review the findings of five studies were relevant to the topic area, all of which suggest racial consciousness as a protective factor. The authors suggest that beliefs about one's self and the environment are individual factors that might affect appraisals of stress and that racial consciousness and identity might function in this way for race related stressors. Harrop et al (2006) also stress the important role of 'community' in providing a 'sense of belonging' and 'connectedness', and state that five of the reviews they examined also suggested this. For example in one review it was explained how greater involvement in Black social networks and higher levels of Black awareness predicted lower alcohol use among Black people, while in another review, ethnographic research on immigrant neighbourhoods was cited which suggested the importance of Vietnamese and Cuban community organisations in contributing to strong identity and the mobility and academic success of people within those communities.

Several of these reviews also provided more detailed pieces of (mostly) qualitative evidence, which may explain how and why ethnic identity and racial consciousness may be protective. One reason suggested was the pride and positive self concept that followed from developing a positive orientation towards one's own group, while another commonly cited finding was the important protective function of critical racial consciousness and understandings of power structures. These are reported to facilitate coping with the psychological assaults of racism, prejudice and discrimination, with an important coping resource suggested to be external 'system-blame' attributions of failure, which may help cushion the blow to self-esteem. In support of this, evidence was reported that African American adolescents consistently report that they are more external in their control beliefs, and that external locus of control is not related to low self esteem or poor mental health for this group. However, in one review, study findings were reported which suggested that critical

consciousness, without the perception of opportunities to overcome oppression, may be associated with lower aspirations, self-esteem, and academic achievement. In another article, review findings were also cited which seem to contradict suggestions of the protective influence of racial or ethnic identity. These findings reported that bi-cultural/ race-less identities among African Americans foster educational resilience, while oppositional social identities, characterised by responses to racism, were a source of vulnerability in school settings.

A major problem with much of the ethnicity research reviewed by Harrop et al (2006) is that it comes from the USA, where issues of racial consciousness are very different to the UK, and hence where it may not be safe to generalise any conclusions.

Other reviews (eg Jones et al, 2006a, 2007b) have looked at community-based interventions to reduce substance misuse among vulnerable and disadvantaged children and young people, and within that they have looked at ethnic minority groups. Jones et al (2006a) identified five systematic reviews and 41 primary studies, again all from the USA, which examined interventions targeting populations of specific ethnicities or mixed ethnicities. Interventions were categorised according to whether they were: school-based; community-based; family-based or multicomponent programmes. They found that there was evidence to suggest that school based interactive programmes could produce long-term increases in smoking and drinking-related knowledge and reduce intentions to use alcohol and tobacco, and long-term reductions in alcohol and tobacco use, in minority ethnic groups, but there was a general lack of effect upon cannabis and other illegal drugs. Cultural tailoring of interventions did not seem to be a prerequisite for success. They found no studies which addressed engagement of ethnic minority populations with interventions, something which they suggest has been highlighted to be a problem in the UK.

In relation to the importance of family factors, Jones et al (2006a) suggest that there is evidence that delivering interventions in combination with parent workshops does lead to an additional decrease in monthly alcohol use. They also suggest that family-based interventions targeting Hispanic populations can have positive impacts on substance use in the immediate term, and can positively impact on some secondary outcomes, including child participation in family meetings, bonding to school, and

regulated communication parenting, but not others (number of family meetings and parental monitoring) in predominantly African American families in the immediate short term.

One other review, this time of the grey literature on drug prevention among young people (McGrath et al, 2006a), did find predominantly UK-based research. They found that drug prevention programmes that are effective for young White people are similarly effective for Black and minority ethnic populations. However, there is also evidence to suggest that adding components which increase the cultural sensitivity of the programme can enhance effectiveness. They suggest that these findings are also consistent with evidence from the mainstream literature.

In summary, this review of the role of ethnicity within intervention programmes has shown that there is a lack of robust research evidence on the extent to which ethnic minorities can benefit from culturally specific health behaviour change interventions, although there may be some limited evidence that appropriately tailored interventions can have enhanced effectiveness in some areas. Although there is evidence from the USA that positive racial or ethnic identity can act as a protective factor, which in turn can foster educational resilience, it is very uncertain how generalisable such findings are to the range of UK contexts. However, USA studies have found that general interventions programmes developed with White populations could usefully be implemented (without requiring cultural tailoring) with members of minority ethnic groups: such intervention programmes include school-based interactive ones, delivering interventions in combination with parent workshops, and family-based interventions. One review of the grey literature on drug prevention among young people did find predominantly UK-based research, which suggested that drug prevention programmes that are effective for young White people are similarly effective for Black and minority ethnic populations, although adding components which increase the cultural sensitivity of the programme can enhance their effectiveness.

None of the reviews found any studies which addressed engagement of ethnic minority populations with interventions, something which has been highlighted to be a problem in the UK. There is clearly a need also to undertake primary research on

interventions to reduce alcohol use and misuse, and to evaluating their effectiveness, among minority ethnic groups, particularly among a range of different groups from the Indian sub-continent, different groups from Africa, and among African-Caribbeans.

Religion and its relationship with young people's attitudes and behaviour towards drinking

There has been even less research in the UK on the relationship between religion and attitudes and behaviour towards alcohol than there has been on ethnicity.

Religion and Ethnicity

Although Newburn and Shiner (2001), in their review of teenage drinking, suggest that the small amount of research which has looked at the role of religion in the drinking patterns of ethnic minority groups has provided very inconclusive evidence, some patterns do emerge.

Purser et al (2001) found that, among men, religious identification emerged as a significant indicator of whether they drank or not, and indeed was more important than other cultural or social factors. They also found, for those who did consume alcohol, that religious identification was associated with less risky drinking.

Stansfeld et al (2003) reported on their sample's religion (they had 42 per cent Muslim, 36 per cent Christian, 12 per cent none, 4 per cent Hindu, 3 per cent Sikh, and 3 per cent Jewish, agnostic, don't know and other), but did not present their data on alcohol consumption divided by that variable. Viner et al (2006), in a report from the same study on health risk behaviour showed that lower risk of regular drinking was associated with birth outside the United Kingdom, Muslim religion, and higher family social support. They also reported that ethnicity appeared to be a factor independent of religion and country of birth *only* in predicting smoking risk, whereas religious affiliation appeared significant only for drinking, where those identifying themselves as Muslim were significantly less likely to drink regularly, although regularity of religious observance appeared independently important only for smoking.

This is somewhat in contrast to the findings of Denscombe (1995) in his study of the relationship of ethnic group to alcohol consumption in over 1,000 15–16-year-olds in Leicestershire, England. He also examined the influence of his respondents' religious affiliation, to see if there were differences within the broader ethnic groups which would be disguised by aggregating the results under these two headings. Within the 'South Asian' group, although some differences in *attitudes* emerged between Hindus, Sikhs and Muslims (with Muslims exhibiting particular sensitivity to their religion's proscription of drinking alcohol), the reported level of *drinking* by the Hindus and Sikhs was not much greater than that of the Muslims. The three groups tended to have a similar frequency of alcohol consumption which was markedly lower than that reported by the White 15–16-year-olds.

Pedersen and Kolstad (2000), in their study in Norway of abstinence among 16–17-year-olds, found that non-drinkers were often from 'non-western immigrant' backgrounds, that Muslims were often non-drinkers, and that religion played an important role in the lives of non-drinkers.

Of course, even though a religion or religious leaders may proscribe alcohol, this does not mean that young people will necessarily follow this ruling. Young people have been pressurised to 'take the pledge' in Ireland for at least the last 150 years (Quinn, 2002; Townend, 2002), and that has not stopped Irish 15–16-year-olds being (alongside the UK) among those most likely to engage in 'binge' drinking (Hibell et al. 2004).

It is also the case that some researchers and commentators seem less than clear about religion and culture within the Indian subcontinent. Some discuss the fact that "*religion may encourage alcohol abstinence among young South Asian people*" (Newburn and Shiner, 2001, p. 36, although they were drawing attention to the fact that statements such as this are too simplistic), ignoring the fact that there are huge variations in nationality, culture, and religion contained within this seemingly uniform group. Although Islam has been set against the use of alcohol since its inception, alcohol has been used in the Indian subcontinent for many years by many other religious, cultural and socio-economic groups. It is the case that there exists a

continuum of acceptance of alcohol, ranging from Sikhism (where alcohol is relatively religiously, culturally and socially acceptable) through Hinduism (whose religion, culture and social norms also allow alcohol, in moderation) to Islam (where alcohol is proscribed religiously, but where cultural and social norms makes it more acceptable, especially if drunk privately). Cochrane (1989) described a similar range of acceptability within immigrant groups in the UK from the Indian sub-continent, finding that even some Muslim young people 'officially' described themselves as non-drinkers even though they may drink, if that can be hidden, certainly in public, from their families and other cultural and religious figures. Newburn and Shiner (2001) also suggest that young Asians may be drinking more than previous generations, and that drinking patterns among young 'non-White' teenagers may be changing alongside those of their White peers.

While most research into religion (as opposed to religiosity) and alcohol has concentrated on the interrelationships with minority ethnic groups, there has been a small amount of more qualitative and reflective writing about the role of alcohol in Judaism (Velleman, 2002; Linke, 1999; Weiss, 2001). Velleman notes that, in Judaism, drinking alcohol is seen as a joyful experience, that abstention from drinking wine was seen as sinful in biblical times, and that abstinence or temperance are frowned upon in Judaism. Within Judaism, alcohol (wine) is central to many – even most – religious and cultural ceremonies, and all Jewish children will be introduced to a sip of wine at an early age, within the family, as part of the Sabbath ceremony. The blessing over wine, followed by drinking a sip of wine, which sanctifies every Sabbath, every week, is an event which every Jewish child grows up with. Velleman draws out three themes which are at the heart of Jews' relationship to alcohol:

> "*the drinking of alcohol (wine) is central to many rituals and traditional ways of signifying events; drinking alcohol is enshrined both in traditional ritual and religion, and in family life and family rituals: the Friday evening service, the wedding, the BarMitzva; drinking alcohol is normally controlled – these are not bacchanalian debauches; they are the controlled consumption of a limited amount of alcohol, within a family, religious and cultural context*." (pp 44–45).

Velleman goes on to show that, although under normal circumstances, Jews are meant to drink sensibly and in a moderate fashion, there are certain occasions (for example, the Passover celebrations) when Jews are permitted (indeed, commanded!) to drink at a level which is likely to lead to intoxication. However, Judaism celebrates the *controlled use* of alcohol (in one sense, even excess is controlled, being undertaken as part of a religious and ritual celebration, and at a time of the religion's choosing, not of the individual) and there are many warnings against overindulgence in Jewish religious writings. Velleman makes the point that Jews used to have very low levels of problem drinking, and suggests a range of possible reasons for this (because alcohol was permitted and sanctioned; because it was consumed within a family, a community and a religious context; because it was surrounded by religious and cultural ritual; because there were designated times where people could (and indeed should) drink more and get intoxicated; because the wine that Jews made was generally awful!). However, both Velleman (2002) and Weiss (2001) show that rates of alcohol problems are rising, and both suggest a number of reasons why this might be occurring (the changes in the strength of the traditional family; the breakdown of religion and tradition and its educative place in the culture; the religion, and the cultural practices which accompany the religion, become increasingly distant and irrelevant from normal secular life; an increase in beer drinking which is not a traditional alcoholic drink; and so on).

There has also been research into various Christian groups which hold different positions on drinking alcohol. Kutter and McDermott (1997) showed that adolescents who came from proscriptive groups such as Baptists had both higher rates of abstention (65 per cent had 'ever used' as opposed to 85–90 per cent of adolescents from other Christian groups which did not proscribe alcohol) and higher rates of binge drinking (proscriptive: 49 per cent ever binged and 22 per cent binged more than five times; other Christian groups: 39–44 per cent ever, and 7–11 per cent more than five times). It seems likely that forbidding alcohol does serve as a brake on starting to consume, but that for those who do not follow the proscription, it may be that they have no close role models of low-consuming adults to follow and hence are less well equipped to know how to drink moderately. There are other studies which also show that young people with no experiences of observing moderate drinking, no specific directives concerning drinking, and no practice in learning how to drink and how to

moderate their drinking, were more likely to acquire alcohol-related health and social problems (Wilkinson, 1970; Weiss, 2001).

One of the key questions which needs to be answered is how children develop their understanding of the difference between (say) drinking alcohol as part of religious celebrations versus drinking and becoming drunk. This is touched upon in Velleman (2002) and Weiss (2001) above, but other than that, this review has found no research examining this question,

Religiosity

Most of the small amount of research which has been done in this area has looked at the relationship between ethnic status and religion (ie is it that Pakistanis or Indians are less likely to drink, or is it that Muslims and Hindus are less likely to drink – the answer appears to be that both influences are important and hugely overlap). However, some research has looked at the degree of religious affiliation (religiosity as it is sometimes termed) within any one ethnic group, to look independently at the role of religion. It seems that religiosity and active religious involvement appear to have a protective effect on young people's drinking (Borynski, 2003; Kerestes et al, 2004; Mason and Windle, 2002).

For example, Francis et al (2005) looked at the impact of personality and religion on attitudes toward alcohol among 243 16–18-year-old sixth-form students in Northern Ireland. They argued that previous research had demonstrated a negative relationship between attitudes toward alcohol and religiosity, but because previous research had demonstrated a relationship between personality and both attitudes toward alcohol and attitudes toward religiosity, it was unclear if this negative relationship might be a function of personality differences. They tested this by looking at attitudes to alcohol alongside personality (the revised Eysenck Personality Questionnaire) and attitudes towards Christianity, and also measured the frequency of personal prayer and church attendance. They found that a more prohibitive attitude toward alcohol was correlated with lower psychoticism scores (greater tendermindedness) and a more positive attitude toward Christianity, with multiple-regression analyses confirming the importance of attitude toward religion in predicting individual differences in attitude toward alcohol.

Religion, like ethnicity, has very different connotations in the USA than in the UK, so any research on religion using USA samples needs to be treated with caution. For example, Mason and Windle (2002) report that religion is a prominent influence in the lives of many boys and girls in the United States, with national survey data indicating that 93 per cent of adolescents (aged 13–17) reporting being affiliated with a religious group or denomination, 80 per cent indicating that religion is at least fairly important to them, and nearly 50 per cent reporting having attended church or synagogue within the past week: this is very different to the experiences of the majority of young people within the UK. Nevertheless, the USA and other research can still provide some pointers in understanding the role of religion in the development of alcohol and other substance use.

Mason and Windle (2002) undertook a longitudinal questionnaire study of 840 adolescents (aged 15– 16) in the USA of the effects of religiosity on adolescent alcohol use and alcohol-related problems, where further questionnaire data was collected 12 months later. The sample was predominantly White (98.5 per cent) and middle class; 74 per cent was Catholic, 16 per cent Protestant, and 10 per cent other. They were especially interested in examining the extent to which religion differentially predicts the decision to use alcohol, the choice among users of how much and how often to drink, and the experience of alcohol-related problems. Regression analyses revealed that religious attendance predicted decreases in the quantity and frequency of alcohol use even in the presence of peer, family, and school variables. Also, religious salience was associated negatively with later decisions to use alcohol, but this association became non-significant when controlling for peer, family, and school influences. Likewise, although religious attendance had a moderate negative relationship with subsequent alcohol problems, this relationship disappeared when more fully specified models were estimated.

As reported above, Heath et al (1999) looked at both ethnicity and religion as providing resilience against teenage alcohol use and smoking, finding that despite higher levels of exposure to family, school and neighbourhood environmental adversities, African American adolescents were less likely to become teenage drinkers or smokers. These teenagers showed greater religious involvement (defined as

frequency of attendance at religious services) and stronger religious values (eg belief in relying upon their religious beliefs to guide day-to-day living). Heath et al found that controlling for religious affiliation, involvement and values removed the ethnic difference in alcohol use, but had no effect on the difference in rates of smoking. The authors suggest that there is a strong protective effect of adolescent religious involvement and values, and that it contributes to lower rates of African American alcohol use.

Timberlake et al (2006) looked at whether religiosity moderated other determinants of smoking initiation in a sample comprising 237 monozygotic twin pairs, 315 dizygotic twin pairs, 779 full-sibling pairs, and 233 half-sibling pairs. They looked at the moderating effects of three measures of religiosity (religious affiliation, organisational religious activity, and self-rated religiousness) and found that all three measures of religiosity were associated with lower rates of smoking initiation. Brechting and Giancola (2006) undertook a longitudinal study of coping strategies and substance use, examining the extent to which religious coping predicted subsequent drug use in adolescent boys in 326 adolescent boys. They found that religious coping, measured at age 12–14, predicted a significant reduction in number of drugs used, frequency of drug use, and problems associated with drug use measured at age 15–16. These results were maintained even when controlling for age and other key coping variables. Sim et al (2005) undertook a qualitative study of parents' perception of the effects of church involvement on adolescent substance use. Three focus groups (consisting of 6–7 parents each) were conducted to learn more about parent's perceptions of protective factors within the neighbourhood, school, family, and the individual. Parents stressed the importance of church involvement in preventing high-risk behaviours.

Soweid et al (2004) conducted a survey study in Lebanon, looking at religious identity and smoking behaviour among adolescents who were just entering the American University of Beirut. They found that religious identity is inversely associated with regular smoking among both male and female adolescents, after adjusting for socio-demographic, behavioural, personal, and environmental risk factors, although the pattern of associations between weak religious identity, other risk factors, and smoking suggests that risk mechanisms may be gender-differentiated.

As well as these many reports suggesting that religiosity and church attendance is protective in young people, there is also evidence that these are protective factors in adults too, or that the protection is long-lasting. NSDUH (2007), the USA National Survey on Drugs and Health, reported that, in 2005, 30.8 per cent of adults in the USA aged 18 or older attended religious services 25 or more times in the past year, 78.1 per cent reported that religious beliefs are a very important part of their lives, and 75.1 per cent reported that religious beliefs influence how they make decisions in their lives. In 2005, 2.9 per cent of adults who attended religious services 25 or more times in the past year used illicit drugs in the past month compared with 10.1 per cent of those who attended religious services fewer than 25 times; and adults who reported that religious beliefs are a very important part of their lives were less likely to use illicit drugs in the past month than those who reported that religious beliefs are not a very important part of their lives (6.1 versus 14.3 per cent).

In summary, the limited amount of research into the relationship between religion, ethnicity and drinking behaviour shows that religious identification is a significant indicator of whether people drink or not, and indeed is often more important than other cultural or social factors. For those who do consume alcohol, religious identification is associated with less risky drinking. There is a consensus that being a Muslim means that individuals are significantly less likely to drink, although some studies also report that people holding any of the religions prominent within the Indian subcontinent have a markedly lower alcohol consumption that do British Whites (presumably mainly non-practising Christians or not affiliated to any religion). There is also some suggestion that young people from the Indian sub-continent may be drinking more than previous generations, and that drinking patterns among young 'non-White' (and Jewish) teenagers may be changing alongside those of their White peers. Nevertheless, great caution needs to be adopted in interpreting the research on the relationship between ethnicity and religion, mainly due to the lack of sophistication shown by many researchers over different religions and ethnic statuses.

The research into the impact of religiosity within any one ethnic group on alcohol consumption shows greater consensus. Although much of the research in this area has come from the USA, where religion in general plays a more dominant role in people's lives, there are still generalisable findings. Religiosity and active religious

involvement appear to have a protective effect on young people's drinking (although regularity of religious observance appeared independently important only for smoking). Religious attendance seems to predict decreases in the quantity and frequency of alcohol use. Religion seems to provide resilience against teenage alcohol use (and smoking); and teenagers showing greater religious involvement (eg frequency of attendance at religious services) and stronger religious values (eg belief in relying upon their religious beliefs to guide day-to-day living), lower the risk of alcohol use. Others have also looked at religiosity as a protective factor against other risks, finding that religious affiliation, organisational religious activity, and self-rated religiousness were all associated with lower rates of smoking initiation; that religious coping predicted a significant reduction in number of drugs used, frequency of drug use, and problems associated with drug use; that parents thought that church involvement was important in preventing high-risk behaviours; and religious identity is inversely associated with regular smoking.

How the various family, peer and media factors described above are influenced by religion

As well as studies looking at the direct relationship between religion and alcohol or other substance use, there have also been a few studies looking at how these variables interact with the various family, peer and media factors described above. In Karlsen et al's (1998) semi-structured interview study with 132 12–13-year-olds from four ethnic groups in inner London, who all underwent a follow-up interview approximately 17 months later, they found that familial, religious and peer influences all closely correlated with ethnicity. They especially found that Bangladeshi young people showed lower levels of peer, and higher levels of religious and familial, involvement and lower levels of substance use, including drinking. White young people reported higher levels of peer, lower levels of religious and familial involvement, and a higher level of substance use. Black African and Black Caribbean young people lay between the two extremes.

As discussed above, Mason and Windle's (2002) study showed that religious *attendance* predicted decreases in the quantity and frequency of alcohol use even in the presence of peer, family, and school variables. But they also showed that although religious *salience* ('How important is your religion?') was associated negatively with

later decisions to use alcohol, this association became non-significant when controlling for peer, family, and school influences. Likewise, although religious attendance had a moderate negative relationship with subsequent alcohol problems, this relationship disappeared when more fully specified models were estimated. These findings imply that, for religious salience but not for religious attendance, the range of influences discussed earlier in this review are more important.

Soldz and Cui (2002) undertook a 7-year longitudinal study of adolescent smoking among 852 young people, first studied at ages 11–12 and followed up until age 17–18. They identified six patterns or clusters in the data: non-smokers, quitters, experimenters, early escalators, late escalators, and continuous smokers. Findings included that, in general, non-smokers had the fewest baseline risk factors and slowest increase in risk factors, whereas continuous smokers had higher baseline and more rapidly increasing trends in risk factors. At age 11–12, traditional protective factors such as attending church or other religious institutions and spending time with fathers, were more closely associated with those who became non-smokers than those who became continuous smokers. In contrast, factors such as the amount of time students truant from school and the amount of time they spend watching television were more closely associated with becoming continuous smokers and escalators. Non-smokers were uniformly less likely to drink alcohol, skip classes, or use marijuana. They also spent less time watching television after school, attended church more often, and spent more time with their parents. Those who became continuous smokers spent less time with their fathers than those who became non-smokers, quitters, or early escalators; those who became continuous smokers exhibited noticeably less religious involvement than non-smokers or quitters; those who became continuous smokers reported spending relatively more time watching television.

Oman et al (2004) looked at religion among a host of other protective factors, in their study of the potential protective effect of ‘youth assets’ on adolescent alcohol and drug use, in a sample from a low-income, inner-city population. They interviewed 1,350 adolescents and parents, examining 9 youth assets: (1) non-parental adult role models (eg “You know adults that encourage you often.”), (2) peer role models (eg “Are most of your friends responsible?”), (3) family communication (eg “How often do you talk to an adult in your household about your problems?”), (4) use of time

(groups/sports) (eg "You participate in an organized activity after class."), (5) use of time (religion) (eg "How often do you participate in church/religious activities?"), (6) community involvement (eg "You work to make your community a better place."), (7) aspirations for the future (eg "As you look to your future, how important is it to you that you stay in school?"), (8) responsible choices (eg "You can say no to activities that you think are wrong."), and (9) good health practices (exercise/ nutrition) (eg "You take good care of your body by eating well and exercising"). They found significant positive relationships between several youth assets and non-use of alcohol and drugs, including the use of time (religion) asset (although the relationship was considerably stronger for females than for males), peer role models, family communication, good health practices [exercise/nutrition], and aspirations for the future. For example, youths who had the peer role model asset were nearly 2.5 times more likely to report non-use of alcohol compared with youths who lacked the asset, and those with the positive family communication asset were almost 2.0 times more likely. The community involvement asset appeared to serve as a protective factor from alcohol use only for youths living in 1-parent households. Finally, females who had the 'responsible choices' asset were nearly 4 times more likely to report non-use of alcohol compared with females who lacked the asset. Across the whole sample, four assets were particularly important: (use of time [religion], family communication, peer role models, and responsible choices). Youths who possessed all of the statistically significant youth assets were 4.44 times more likely to report non-use of alcohol and 5.41 times more likely to report non-use of drugs compared with youths who possessed fewer youth assets.

In summary, little research has been published in the UK examining how the various family, peer and media factors described earlier in this review are influenced by religion grouping. What there is, coupled with research from the USA and elsewhere, suggests that familial, religious and peer influences are all closely correlated with ethnicity; and that, in London, mostly Muslim young people showed lower levels of substance use, including drinking, coupled with higher levels of religious and familial, and lower levels of peer, involvement, as compared to White, Black African and Black Caribbean young people, most of whom may be presumed to be either Christian, or of no fixed or practising religion. Other studies have shown that religious *attendance* predicts decreases in the quantity and frequency of alcohol use

even in the presence of peer, family, and school variables; but that peer, family, and school influences are of more importance than religious *salience* ('How important is your religion?') in relation to later decisions to use alcohol, implying that, for religious salience but not for religious attendance, the range of influences discussed earlier in this review are more important.

In terms of smoking rather than drinking, traditional protective factors such as attending church or other religious institutions, spending more time with parents, watching less television after school, being less likely to drink alcohol, truant, or use marijuana, were all strongly associated with staying a non-smoker for longer; whereas truancy, the amount of time spent watching television, spending less time with parents, and having less religious involvement, are more closely associated with becoming continuous smokers and escalators. These findings also fit with the work on 'youth assets', where religious involvement, peer role models, family communication, good health practices (exercise/nutrition), and aspirations for the future all predicted the non-use of alcohol and drugs.

Intervention programmes and religion

As with ethnicity, a number of reviews and studies have looked at the role of religion in intervention programmes.

Harrop et al (2006) in their 'review of reviews' state that evidence on religious beliefs as an individual level protective factor was highlighted in two reviews. They also found evidence from other reviews of a relationship at a community level between religion and health. They suggest that there is evidence of a positive relationship between religious involvement or religiosity and positive outcomes including health, mental health, reduced substance use, competence, and educational attainment. They state that, overall, the studies cut across different ethnic groups, although a bias towards Christian groups was reported in one review and seems likely in the others given the ethnic composition of the groups under consideration in these USA studies (eg Hispanic, African American, USA White). One of these reviews was a systematic review, which explored studies which looked at the influences of race, ethnicity and poverty on the mental health of children in the US. Study findings demonstrated protective factors against mental illness in ethnic groups who were same SES groups

as their White counterparts, leading the reviewer to suggest that the increased religious attendance of minority ethnic children may buffer against psychological distress.

Harrop et al also called attention to a finding from a review of longitudinal studies, where it was suggested that many families of resilient children held religious beliefs that provided stability and meaning to lives, and appear to have provided resilient children with a sense of rootedness and coherence (Werner, 2000).

In summary, this review of the role of religion within intervention programmes has shown that there is some evidence that religious beliefs and involvement can work as a protective factor, both at the individual level and the community one, being associated with many positive outcomes including health, mental health, reduced substance use, competence, and educational attainment. There is also a suggestion from longitudinal studies that religious beliefs may be associated with resilience in children, with a putative mechanism being that such beliefs provide stability and meaning to lives, and provide roots and coherence.

Socio-Economic Status and its relationship with young people's attitudes and behaviour towards drinking

There is very little primary research into the impact of socio-economic status (SES) or social class on young people's drinking, other than from periodic national surveys of drinking which divide results by socio-economic variables. Thom (2003) shows that although the heaviest male drinkers are in the higher income brackets, there is evidence to show that problem drinking is twice as common in the poorest socio-economic groups. She cites one study which found that men aged 25–39 in the unskilled manual group were 10 to 20 times more likely than men in professional classes to die from alcohol-related causes, and states that excess drinking is also higher among men who are socially excluded. Around 30 per cent of homeless people are problem drinkers and around 40 per cent of homeless men have been reported as 'high risk' drinkers, and she reminds us that the indicators of social exclusion often overlap with measures of socio-economic status, eg income, employment, education, housing (Thom, 2003, p15). Newburn and Shiner (2001) however suggest that there is evidence that binge drinking is most prevalent among young men in manual

occupations who had not pursued their education beyond secondary school (p 37), and Measham (1996) reported that heavy sessional drinking and heavier weekly drinking were positively associated with living in a working-class school catchment area among her 15-year-old respondents.

This conclusion that there is very little research which has been undertaken into the influence of socio-economic status on drinking is further reinforced by the recent systematic review of socio-economic status in childhood and later alcohol use (Wiles et al, 2007). Their systematic search to identify all longitudinal population-based studies that examined the association between childhood SES and later alcohol use revealed 19 relevant articles (eight birth cohorts and 11 papers on school-aged cohorts), but they concluded that there was little consistent evidence to support an association between lower childhood SES and later (mis)use of alcohol. Only a minority of studies included assessment of problem alcohol use, and in only one study was the relationship between SES and alcohol use the main research question. They concluded that there was little robust evidence to support the assumption that childhood disadvantage is associated with later alcohol use/abuse. They expressed surprise, given the importance of this issue in terms of policy, at the lack of evidence and they emphasised the need for further research in order to inform future policies and public health messages. They also make the point that the *lack of evidence* to support an association between SES in early life and later alcohol use cannot be taken as *confirming the absence of an association*. It is possible that there is an indirect pathway between SES in early life and later alcohol use; for example, via childhood conduct problems, which could account for such a weak relationship. They suggest that there may be two opposing mechanisms:

> "*First, social deprivation is, in general, associated with almost all forms of morbidity and mortality. Secondly, and opposing this, is that those with more money can afford more alcohol. There is a consistent inverse relationship across time between the cost of alcohol and the amount consumed. The steepness of social gradients also vary across time and place. For example, there is more income inequality in the United Kingdom now than in 1970, and the United Kingdom and United States have more income inequality than Scandinavian countries. Similarly, alcohol is more expensive in Sweden compared to the United Kingdom, and the price of alcohol in the United*

> *Kingdom has fallen since 1970. It is possible that these opposing factors may have contributed to the conflicting evidence that we found*" (p 1561).

Other reviews have also looked at the impact of socio-economic status in health-related areas, which is of related usefulness for this present review. The review by Taylor et al (2007) for the National Institute for Clinical Excellence (NICE) sought to identify and evaluate evidence relating to how the social and cultural context in which people live influences the effectiveness of interventions to change health knowledge, attitudes, intentions and behaviours, with the team being requested to use examples from the fields of smoking, physical activity, and healthy eating, and specifically to consider the relevance of life course, gender, income and allied social positioning, ethnicity, place, and other variables highlighted by the literature. Their conclusions about ethnicity have already been referred to above in the relevant section; their conclusions with respect to income, social position and health are that there is evidence that structural interventions that affect the health behaviours of entire populations are more likely to reduce health inequalities than interventions focused primarily on increasing knowledge and facilitating informed choice.

Taylor et al (2006) considered the extent to which social, environmental and economic factors have been included in the models which they identified as providing the theoretical base behind projects which study and predict health-related behaviour-change, measured in terms of shifts in knowledge, attitude, intention and behaviour. As discussed previously in this review, the models they examined were the Health Belief Model (HBM), the Theory of Reasoned Action (TRA), the Theory of Planned Behaviour (TPB), and the Trans-Theoretical Model (TTM) or Stages of Change (SoC) model. Taylor et al (2006) argue that "*none of the models examined in this review is specified adequately to incorporate and interpret the significance of social, economic and/or environmental factors as predictors and determinants of health behaviour*" (p7). They argue that "*This finding also has important implications for the commissioning of research and development in this public health field. It is relevant to issues such as the future integration of sociological and psychological approaches to understanding and changing health behaviours. At present apparent failings in this area imply that opportunities to understand cognitive dimensions of class and ethnicity related (and other) health inequalities are being lost*" (p 7). Taylor et al

then go on to examine what evidence, if any, does exist relating to the influence of social and cultural context on the effectiveness of health behaviour change interventions. They state that, although there is evidence of the influence of social and cultural context in relation to diet, exercise and smoking, there is limited evidence in relation to alcohol and young people.

Other societal or cultural factors – Sport and other extra-curricular activities

Ethnicity, religion, socio-economic status and nationality are not the only societal or cultural factors which have been found to impact upon attitudes and behaviour towards alcohol.

Sport and other extra-curricular activities have been found to be important: in general, young people involved in extra-curricular activities including sport are less likely to have problems with alcohol (eg Eccles and Barber, 1999), although some evidence exists that youths participating in sports may be more prone to risky drinking practices (Nelson and Wechsler, 2001, 2003).

It is also the case that young people who do not become involved in such activities are also more likely to initiate alcohol use early. Hellandsjo Bu et al, (2002) found, among Norwegian children, those who commenced drinking at under 14 years of age had a constellation of factors which separated them from those who started later, of which not participating in sports was one (others were experiencing less family support and a more highly organised family life, reporting more frequent peer and parental drinking, coming from single-parent families, and living in cities. These authors also concluded that participation in organised sport activities may delay the initiation of both drinking and intoxication in younger teenagers, and they recommended that sports organisations should be included in drinking prevention programmes.

Werch et al undertook two interventions studies based on these ideas. Werch et al (2003a) developed a novel sport-based intervention aimed at preventing alcohol use within the context of a sport programme and promoting physical activity among adolescents. 465 young people aged 13–14 in the northeast Florida region of the USA

were randomly assigned to one of three groups, with one group receiving a 10-minute 'sport consultation' (Sport), a second the same 'sport consultation plus an alcohol consultation' of similar length (Sport Plus), and a third the 'sport consultation', the 'alcohol consultation', and their parents were sent by post various materials on health and fitness (including alcohol and sport), on a weekly basis for five weeks (Sport Plus Parent). Data was collected at baseline and three-month post-intervention. They found significant improvements between baseline and follow-up for various alcohol measures, both the exercise measures, and for a number of four risk/protective factors. Those adolescents who were already drinking at baseline and who had the sports intervention alone showed the greatest improvements on all but two measures, although those who also had the parental component showed an improvement on parental–child alcohol-related communication. The authors concluded that a brief sport-based screen and consultation tailored to adolescents' health habits, with and without parent materials, may potentially reduce alcohol use while increasing exercise frequency. Werch et al (2005) tested this a second time with a somewhat older age-group: 604 14–17-year-olds, also from northeast Florida, this time utilising a randomised control trial design with participants randomly assigned to receive either a brief health and exercise consultation and resulting 'prescription', with a mailed reinforcing follow-up flyer (Project SPORT) or a minimal intervention control consisting of a wellness brochure provided in school and a pamphlet about teen health and fitness mailed to the home. Project SPORT participants demonstrated significant positive effects at 3-months post-intervention for alcohol consumption, alcohol initiation behaviours, alcohol use risk and protective factors, drug use behaviours, and exercise habits, and at 12-months for alcohol use risk and protective factors, cigarette use, and cigarette initiation. There were also significant positive effects on alcohol consumption, drug use behaviours, and drug use initiation at 3-months, and for drug use behaviours and exercise habits at 12-months, for adolescents who used marijuana who received Project SPORT. Again the authors concluded that a brief, 12-minute one-to-one consultation integrating alcohol avoidance messages within those promoting fitness and other positive health behaviours holds promise for influencing adolescent alcohol and cigarette use and other health behaviours at post-treatment and one year later.

Sport is not the only extra-curricular activity which has been found to interact with alcohol use in young people. Membership of youth groups is another. Bellis et al (2007), in their study of the predictors of risky alcohol consumption in schoolchildren, where they surveyed 10,271 15–16-year-olds, 88 per cent of whom drank alcohol, showed that membership of youth groups/teams was in general protective against risky drinking (bingeing, high frequency drinking, drinking outdoors) despite some association with bingeing. Further evidence comes from the study outlined above in the section on religion by Oman et al (2004), which looked at a number of protective factors, which they described as 'youth assets'. They looked at the potential protective effect of these assets on adolescent alcohol and drug use, in a sample of 1,350 adolescents and parents from a low-income, inner-city population. They examined nine youth assets, all but one of which have not yet been examined in this present review: non-parental adult role models (eg "You know adults that encourage you often."), use of time (groups/sports) (eg "You participate in an organized activity after class."), use of time (religion) (eg "How often do you participate in church/religious activities?"), community involvement (eg "You work to make your community a better place."), aspirations for the future (eg "As you look to your future, how important is it to you that you stay in school?"), responsible choices (eg "You can say no to activities that you think are wrong."), good health practices (exercise/ nutrition) (eg "You take good care of your body by eating well and exercising"), and peer role models (eg "Are most of your friends responsible?"); the one which has been examined elsewhere in this review is 'family communication' (eg "How often do you talk to an adult in your household about your problems?"). They found significant positive relationships between several of these 'youth assets' and non-use of alcohol and drugs, including the use of time (religion) asset, good health practices [exercise/nutrition], aspirations for the future, and peer role models, as well as with family communication. For example, youths who had the peer role model asset were nearly 2.5 times more likely to report non-use of alcohol compared with youths who lacked the asset, and those with the positive family communication asset were almost 2.0 times more likely. The community involvement asset appeared to serve as a protective factor from alcohol use only for youths living in 1-parent households. Finally, females who had the 'responsible choices' asset were nearly 4 times more likely to report non-use of alcohol compared with females who lacked the asset. Across the whole sample, four assets were particularly important: (use of time

[religion], family communication, peer role models, and responsible choices). Youths who possessed all of the statistically significant youth assets were 4.44 times more likely to report non-use of alcohol and 5.41 times more likely to report non-use of drugs compared with youths who possessed fewer youth assets.

In many ways these youth assets and the influences of religion, sport, strong family bonds, etc, can all be seen as protective factors, which increase a young person's resilience; and enable them to withstand some or all of any risk factors that they might also have, and which may protect them from risks they encounter.

Risk and protective factors for problem drinking

The review above has so far focused on the normal development of drinking among young people and the influences that act upon this process. This has highlighted that some processes act as protective ones for young people, tending to slow down any initiation into drinking, and the development of heavier drinking styles; and other processes tend to increase the risk that young people will initiate drinking earlier, and /or will move into heavier or more risky drinking styles.

It is therefore the case that some individuals (and groups of individuals) are at particular risk of developing risky drinking styles, and of then going on to develop problems with their drinking. The review above has concentrated on risk and protective factors related to family relations, peer relations, and the impact of the media and alcohol marketing, as well as examining the influence of a variety of cultural and social contexts.

There are however a range of further risk and protective factors which operate at the individual (or group) level, which are outside of the scope of this review. These further risk factors include genetic pre-disposition (ie a predisposition to go on to develop serious alcohol problems in adulthood) (Edenberg and Foroud, 2006) and childhood sexual and physical abuse (Widom, 2001). There are as well a number of other factors which are both outcomes (of some of the family and other processes discussed in the body of the review), and which are in turn also serious risk factors for later risky drinking and alcohol-related problems. These include conduct disorder or

anti-social behaviour in either school or home, truancy, delinquency, poor academic performance and poor integration into school (Mentor, 2007).

There is also a range of further protective factors outside of the scope of this review (having a higher intellectual capacity, living in a community where there is a sense of caring and mutual protection, having a sense of humour, having an easy temperament and disposition, Mentor, 2007, Velleman and Templeton, 2007) and a range of outcomes (of some of the family and other processes discussed) which act as further protective factors against the development or problematic drinking. These include having high levels of self-monitoring skills and self-control, having family responsibilities, observing traditions and rituals (cultural, religious, familial), having a successful school experience, having a hobby or a creative talent or engagement in outside activities or interests, and having strong bonds with one's local community (Mentor, 2007; Velleman and Templeton, 2007).

This observation that some factors are protective and others create risk is not a new one. Risk, protection and resulting levels of resilience have been highly researched over the past 30 years (Rutter, 1987; Werner and Smith, 1982; Werner, 1993, 2000) and reviewed many times: generally in relation to child development (eg Gilligan, 2000; Glantz and Johnson, 1999; Luthar, 2003; Newman, 2002), more specifically in relation to alcohol and drug misuse prevention in young people (DrugScope, 1999; Mentor, 2007), and even more specifically by examining the particular circumstances of children living with one or more parents with substance misuse problems (Velleman and Templeton, 2007).

Interestingly, the key factors which emerge from all of these different types of reviews are strikingly similar. They are summarised in Table 1 at the end of this Review, which shows general risk factors, then looks at substance specific factors for children of substance misusers, and the extra risk factors if there is a parental drug (as opposed to alcohol) problem, and the risk factors related to the individual, before going on to look at protective factors, and then the resilience factors or processes which these protective factors encourage.

The area of resilience has come in for particular scrutiny over the past decade (eg Gilligan, 2000; Glantz and Johnson, 1999; Luthar, 2003; Newman, 2002). One study (Scales and Leffert, 1999) which investigated resilience quite systematically developed a scale of resilience factors (or 'Developmental Assets'), and looked in one population at how many young people had these factors. These resilience factors, and the percentage of children in that population having them, are shown in Table 2 (at the end of this Review). There is a clear relationship between resilience and risky behaviour, as Table 3 shows: the greater the number of resilience factors, the greater a reduction there is in the chances of a child acting in a risky fashion.

Culture and its relationship with young people's attitudes and behaviour towards drinking

In many ways, 'culture' could be seen as an overall term for many of those elements already discussed – country/nationality/regionality, ethnicity, religion, socio-economic status, class, income level; and as such many of the conclusions already reached are apposite here too. Thom argues that "*a considerable amount of work still needs to be done to understand the influence of factors such as religion, social class, peer networks and family influence on the drinking habits of different ethnic and cultural groups. Moreover, the possibility that different ethnic groups may hold different gender 'images' and the possible interaction of male image and substance use with some of the other variables mentioned above have not been explored*" (p 14).

One area not examined so far (other than in the work of Velleman, 2002, above) is the influence of cultural norms. As Roche (2001, p 4) says in relation to cultural and community norms, "*it is the group that establishes the norms for acceptable behaviour and, by and large, individuals comply with these group norms*." As in other areas of social behaviour, how each individual sits within the overall group, and within their sub-group(s), will determine to a large extent whether they acquiesce with the group or cultural norms, or whether they decide to do something different – which in terms of society's attitudes to young people and their decisions to 'be different to their parents' is often seen as youthful rebellion, leading to regular 'moral panics' about their behaviours (see Dorn, 1983, on 'Youth, drink and indiscipline: a new moral panic'; and 'The sociology of moral panics', pp 3–10). Tajfel termed this

'fitting in with' or 'standing against' such group norms as Inter-Group behaviour (and the overall area of study as Social Identity Theory) (eg Tajfel, 1982).

Roche (2001) uses the term 'cultural recipes' to describe ways in which alcohol should or should not be used, with these cultural recipes describing "*the where, what, when and how of alcohol used that is socially sanctioned*" within their culture or social group (Roche, p 6), and Velleman (2002) describes one such set of 'cultural recipes' for the ways that he, as a Jewish child in 1950s and 1960s England, was culturally exposed to and taught culturally acceptable attitudes and behaviours towards alcohol. Roche (2001, pp 11–13) and Sanchez-Sosa and Poldrugo (2001, pp 59–60) describe a number of culturally distinct patterns of drinking between northern and southern Europe, in different Asian countries, with indigenous people, and within Latin America and Sub-Saharan Africa. Sanchez-Sosa and Poldrugo (2001) also discuss the limited research on the impact of immigration and learning to adapt to other cultures on drinking behaviour.

Another aspect of 'culture' is 'place' or geographical location (Gatrell et al, 2000): the dynamics of neighbourhood and the ways in which the social history and linked physical characteristics of areas of residence may have a significant influence on health and health behaviour, but again, very little work has been undertaken on this subject. Taylor et al (2007) in their review of how the social and cultural context in which people live influences the effectiveness of interventions to change health knowledge, attitudes, intentions and behaviours, state that

> "*none of the studies identified for the purposes of this tertiary review were aimed specifically at elucidating the influence of place on the effectiveness of health behaviour change interventions. Although locational context is a potentially important variable to take into account when evaluating health behaviour change programmes, its components do not appear as yet to have been systematically identified and quantified*" (p 33).

One study in the UK has approached the issue of drinking behaviour from this perspective: Valentine et al (2007). They conclude that the priority given to public drinking by government policy and the media has detracted attention from a much broader spectrum of the population's routine domestic drinking practices. They argue

that, because binge drinking, though technically referring to episodic heavy alcohol consumption, has come to mean high levels of street drinking by young people, this has left many people who consume high levels of alcohol in very different social circumstances feeling (unwarrantedly) insulated from concern. In their study, many whose home consumption far exceeded government-recommended weekly limits continued to regard their own drinking practices as unremarkable.

Their research identified clear differences in tolerance thresholds and expectations of appropriate behaviour between the urban and rural areas they investigated. Pertinent to this review's area of concern, they showed that home was increasingly where young people learned to drink. As such, they argue, young people's drinking habits need to be understood and addressed in relation to their parents' attitudes to and use of alcohol, and the wider changing nature of intergenerational relationships and parenting practices.

Valentine et al (2007) conclude that drinking cultures are not uniform across the country, but are embedded within wider historical, socio-economic and cultural contexts. They suggest that more recognition is needed of how national alcohol strategies might be interpreted differently or have a different impact on specific locales. They suggest that this is particularly pertinent in the light of the *Licensing Act 2003*, which has given local authorities more power to potentially dictate local licensing strategies. Geographical disparities may thus emerge in approaches to regulating and policing alcohol consumption. Their study involved adults aged 18+, differentiated as the 'older generation' (mid-50s and over); the 'mid-generation' (30s to 50s); and the 'younger generation' (late teens, early 20s). There were significant patterns in experiences of drinking across the generations. The younger generation in their study, however, had largely been introduced to alcohol at a young age within a family context, and described a much more relaxed attitude by their parents towards their experiments with alcohol than the mid and older generations. Parents often appeared to condone and even supply alcohol for under-age drinking by their children and their peers. This sometimes reflected parents' belief that early, controlled access to alcohol would enable their children to develop responsible attitudes to drinking and prevent them getting into trouble behind their parents' backs. It also reflected contemporary parents' desire for a close relationship with their children and to give

them freedoms they had been denied. There was also recognition, in light of their own domestic drinking, that it was difficult to preach abstention.

Although Valentine et al's work is a helpful start, there has clearly been insufficient work in this area. As Thom (2003) argues,

> "*more in-depth examination of cultural factors is called for. Another factor which appeared to influence risky drinking was the size of household in which men were living, with men in small households being more at risk. It was not clear from the results whether living in a small household, especially when linked to lack of religious identification, was indicative of a reduced social network which might be a cause or effect of heavy drinking. On the other hand, the data may simply indicate a group of young heavy drinkers who lack family ties and have money and leisure time. The study could not, however, explain what helped to sustain risky drinking and the authors suggest the need for further work to explore the influence of cultural events such as weddings and a tradition of male-only socialising. Little attention has been paid to ethnicity and cultural diversity in research on young people's drinking*" (p 14).

Future work on culture and young people's drinking

Nichter (2003), in a thought-provoking paper about culture, ethnicity and adolescent smoking, raises a number of issues, asks a number of questions, and raises some interesting examples of the role that culture and ethnicity both play in young people's smoking initiation and maintenance, which are pertinent to the influence of culture (culture, religion, nationality, ethnicity, place, etc) on young people's attitudes and behaviour towards alcohol.

Linking Nichter's work with issues which have come to light within this section of the review, some of the questions which emerge in this area are:

- Is drinking behaviour in particular social and economic contexts influenced by cultural norms and processes and if so, how?
- What has drinking alcohol come to represent to those sharing an ethnic identity?

- The following three issues should be addressed by ethnographic research. What is the role that cultural institutions, values, and processes play in:
    - (1) protecting against excessive drinking in the general population, as well as particular patterns of drinking among males and females,
    - (2) fostering drinking as a normative behaviour within particular gender and age cohorts and
    - (3) affecting the distribution of particular drinking trajectories (eg early versus late onset of drinking, drinking characterised by rapid versus slow escalation, etc).

This ethnographic analysis would serve as a complement to assessments by researchers who examine intra-ethnic group differences by examinations of social class, education, residence, racial segregation and acculturation (although there has been remarkably little of this research too, within the UK).

- Parenting styles and respect for elders are two variables highlighted in the USA as important factors influencing smoking behaviour. Beyond noting that these factors may also affect drinking uptake and age of initiation (as covered in the earlier sections of this review), we need to consider how and in what ways they affect young people once they begin drinking. What verbal and nonverbal messages do young people receive from male and female parental figures in different ethnic communities at different points in their drinking trajectories? Once someone becomes a drinker, are they urged to quit, or to moderate or is excessive behaviour accepted? How does respect for elders influence when and where young people may drink, and how does this differ by not only age and gender, but by employment status? How do cultural sanctions influence patterns and levels of drinking?
- What protective role do associated messages play such as those which emphasise maintaining a positive self image in the face of adversity and messages which remind young people that one's behaviour reflects not only on their person, but family and community? In what contexts do such messages matter and in what contexts do they fall on deaf ears? In contexts where such messages matter, do they contribute to reported ethnic differences in peer group influence or are other factors involved? And, are there gender and age differences in the ways youth respond to both peer influence and the messages of elders?

- In addition to examining the influence of family and peers it might be useful to focus attention on the influence of other role models. For example, among many different ethnic groups, senior women (mothers, grandmothers, and extended kin) often, but not always, act as effective role models for the young as providers and survivors.
- Another issue worth considering is how core cultural values affect drinking behaviour once drinking has started. For example, the importance accorded to social exchange and reciprocity within different ethnic groups may be an important factor to investigate. Being offered and accepting or refusing a drink within South Indian communities, for example, may carry a locus of meaning far different than within African or Caribbean or mainstream White UK communities, and this meaning may differ by gender.
- Similarly, cultural values may influence peer group norms and boundary setting related to alcohol use. It may be that peers sometimes play a dual role in both encouraging drinking uptake and also limiting where, when and how much friends drink; that is, they are at once a risk and a protective factor that may affect drinking trajectories. The role of peers in establishing boundaries for acceptable behaviour has also been noted. An issue worth exploring is whether peer relations vary within different ethnic groups such that friends are more or less likely to act as boundary setters circumscribing the behaviours of peers, in relation to alcohol?
- What is the impact of aesthetics and style as important cultural factors influencing drinking, because they are often associated with ethnic identity? Do boys and girls within different ethnic groups see using alcohol as enhancing or detrimental to their drinking, in comparison to mainstream White boys and girls? Is drinking equated with style?
- Although socio-cultural events and traditional ceremonies or festivities such as Christmas, football matches, alcohol within religious ceremonies, etc are clearly an important part of the socialisation process within any culture and subculture, there is no research clarifying the specific part that they play as influencing children's learning, attitudes and behaviours.
- What are the important family / community contexts and environments which influence children's experiences (eg growing up in families with a drinking/drug problem; 'excluded' families; teetotal families; families or communities with

specific religious and cultural beliefs about alcohol; 'deprived' communities etc). Although a lot is known about the specific influence of growing up in families with a drinking/drug problem (eg Velleman and Orford, 1999), much less is known about most of the other areas.

Some of these ideas are by no means new. Honess et al (2000) raised some similar ones in their seminal work, where they suggested a need to address the more complex questions of the meaning and value of drinking of alcohol in the lives of 12–17-year-olds. Wright (1999) argued that the social contexts for drinking are necessary to understand alcohol's more general 'place and meaning' for young people. Honess et al (2000) suggest that one of the key tasks of adolescence in the UK is to learn how to use alcohol appropriately, and link that to the notion of a developmental task (Honess, 1992). Honess et al suggest that a young person might see alcohol as serving any or all of a number of functions, including distancing from parents; fostering a feeling of security, in the sense of being relaxed, and able to express one's own views; allowing opportunities to develop trust with particular others; and providing opportunities to explore sexual relationships in a less threatening context where drinking may be used to excuse one's behaviour; and there is evidence in the review above to corroborate each of these functions.

Nichter argues that "*I would argue that it is far more productive to look for cultural differences in smoking after first accounting for other factors known to predispose an individual to smoke, including education, social class, economic insecurity, stressors (e.g. discrimination), other drug use, etc*" (2003, p 140) and the same must hold also for alcohol.

Implications for prevention

The review above has summarised what we know about how knowledge, attitudes, and behaviour towards alcohol are formed in young people.

We know that children and young people are going to learn about alcohol, and that they do so from an extremely young age. We also know that they learn about alcohol from multiple influences. As with many other areas, this learning will follow a developmental trajectory. There is strong evidence linking a wide range of parental and family factors to developments in young people's attitudes and behaviour towards alcohol. Children and young people will learn a great deal from the media and other representations, but basic attitudes and intentions will *initially* be most influenced by parents. (Knowledge and expectancies will not necessarily be so predominantly influenced by parents. They may learn a great deal about alcohol, and acquire expectancies of what will happen if they drink, from the media or from other adults; but their attitudes and intentions towards this knowledge and these expectancies will be initially primarily determined by their families – especially parents but of course including a host of other important family influences, such as grandparents, siblings, etc, depending on how these other family influences are considered by the family subculture.)

As they grow, so the primary influence may change, away from parental influence and more towards societal as a whole, and then towards peer influence; but again, parental and family factors (monitoring, management, communication, and so on) hold huge sway over how much influence these other factors have, and at which stages they will start to predominate.

Similarly, as they grow older, young people's involvement in various aspects of their community (religion, sport, community activism, etc) also play a prominent role in their relationship towards alcohol, again heavily influenced by the same parental (and later peer) factors already discussed.

Finally, media and other global socialisations' influences are massive, and have skewed these relationships, especially with children / young people where family controls are less apparent.

There is still lots of *detail* that is not known (as outlined in the previous section and sub-sections, about ethnicity, religion, SES, and so on) but the main lines are clear.

The review above also suggested that there are a number of other factors, over and above what and how they learn, which serve to increase the risks to children and young people: risks of commencing alcohol use early, and risks of then developing problems with that alcohol use. These other factors which increase risk (such as child abuse, truanting, poor school performance) were briefly listed above, alongside a brief review of some of the protective factors which research has shown are linked to greater resilience in young people.

This range of findings summarised above are all important for this latter part of the present review, because various prevention programmes focus on one or more of these issues: altering how children learn about and develop attitudes and expectancies towards alcohol, reducing more general risk factors, and enhancing protective factors and developing resilience.

What then are the implications of these findings for prevention? There are three reasons for asking this question: first, because the practical implications of research are obviously key; second, the application of findings from basic aetiological research is integral to the development and refinement of preventive interventions; and third, by examining what is known about how well prevention interventions (which are based on the understanding obtained so far) work provides further evidence to either corroborate or revise that understanding. As Wood (2007) argues,

> "*preventive interventions, particularly those that combine experimental designs with examination of putative mediators, can uniquely inform the etiology of alcohol use and misuse*" (p 1020).

The review above has suggested that there is strong evidence linking a wide range of parental and family factors to developments in young people's attitudes and behaviour

towards alcohol; that there is similarly strong evidence for the influence of peers; and that there is also strong evidence for the influence of advertising, the media and wider cultural socialisation processes.

- If it is the case that children learn about alcohol via a mixture of influences from primarily parents and family, peers, and the media,
- and if it is the case that alcohol use is not simply a matter of knowledge, but also of attitudes, expectations, and intentions,
- and if it is the case that there are certain risk factors which make it more likely that young people will start to drink problematically, and other protective factors which make it more likely that young people will become resilient,

then prevention programmes that target these areas, and /or target those young people who appear to be at particular risk of developing problems with their alcohol use, should be more effective than others which (say) provide knowledge and information, or just tell young people not to drink.

If the evidence linking parental and family factors to the development of attitudes, intentions and behaviour towards alcohol is correct, then preventative interventions utilising parents ought to lead to changes in these attitudes, intentions and behaviour. If the link with peers is correct, then preventative interventions with peers ought to work; if advertising and general culture is a driving factor, then interventions aimed at these elements ought to work.

Similarly, if it is the case that there are certain more general risk factors which make if more likely that young people will develop problems, and if it is the case that there are certain protective factors which lead to increased resilience in young people, then preventative interventions which focus on these elements (such as social skills training or changes to the school environment or the development of extra-curricular activities) ought also to work.

If any of these prevention programmes do work, then we obtain important corroboration of our theories. If they do not work, this may be because our theories are incorrect, or because we have focused on the wrong part of the theory, or because

the way we have implemented the ideas stemming from the theory are wrong. It may also be the case that the measurement and evaluation techniques that have been employed are inadequate or inappropriate.

So, how have prevention interventions based on these three ideas worked in practice? There have been a number of reviews recently of the effectiveness of alcohol or other substance prevention programmes (Cuijpers, 2002a, b, 2003, 2005; Foxcroft et al, 2002, 2003; Gates et al, 2006; Jefferson et al, 2007; Jones et al, 2006a, b, 2007a, b; Kumpfer, Alvarado and Whiteside, 2003; NICE, 2007; NIDA, 2003; Roe and Becker, 2005; Skara and Sussman, 2003; Stead et al, 2006; Tait and Hulse, 2003; Taylor et al, 2007; Tobler et al, 2000), and this present review draws on these, as well as on examinations of primary research. Brief summaries of the key interventions discussed in this review can be found in Appendix 1.

In the following sections, interventions targeting parents and family, peers, advertising and media, and more general risk and protective factors are examined. This is followed by a discussion of the implications for policy and practice which points to areas where further research is needed.

Parents and family

There is evidence that interventions utilising the family and the family/parenting factors examined in this present review are amongst the most effective.

There are a number of examples of well evaluated parent- or family-based interventions (the Spoth et al, and the Dishion et al teams in particular, eg Dishion et al, 2003, 2004; Spoth et al, 2004, 2005). Foxcroft et al (2002, 2003) argue from their systematic review of psychosocial and education-based alcohol misuse primary prevention programmes among young people that family-based programmes (and especially the one developed by Spoth and Molgaard, Strengthening Families) are the only primary alcohol prevention programmes to show longer-term results in the alcohol field, although they draw attention to the fact that the majority of the studies they were able to review emanated from the USA. Similar findings (ie of the strength of family-based interventions, and preponderance of USA research) have been forthcoming in reviews of drug-use prevention (eg Gates et al, 2006). Foxcroft et al

also noted that, because most of the studies reviewed were undertaken within the United States, this meant that the core prevention outcome used tended to be abstinence. They suggested that consideration needs to be given to how these prevention approaches may transfer to other countries, where messages regarding consumption of alcohol (and indeed other drugs) are very different.

Stead et al (2006) in their review of the effectiveness of social marketing interventions related to alcohol, tobacco and substance misuse found four studies that had examined the long-term impact (over two years) of their intervention on alcohol use. Although it is not clear that these are in fact 'social marketing approaches' (which Stead et al define as "*The systematic application of marketing concepts and techniques to achieve specific behavioural goals relevant to a social good*" (p 6)), two of the four studies had positive effects: one was a multi-component community intervention (Project Northland: Perry et al, 1996, which will be described in a later sub-section on multi-component programmes), the other was the Strengthening Families family programme (Spoth et al, 2001).

NIDA (2003) in their review of the prevention of drug use among children and adolescents also show that family-based prevention programmes which deal with many of the issues outlined in earlier sections of this review (enhancing family bonding and relationships; including parenting skills; including practice in developing, discussing, and enforcing family policies on substance misuse; and training in drug education and information) are to be encouraged. Their review argues that

> "*Family bonding is the bedrock of the relationship between parents and children. Bonding can be strengthened through skills training on parent supportiveness of children, parent-child communication, and parental involvement.*" … "*Parental monitoring and supervision are critical for drug abuse prevention. These skills can be enhanced with training on rule-setting; techniques for monitoring activities; praise for appropriate behaviour; and moderate, consistent discipline that enforces defined family rules*" … "*Drug education and information for parents or caregivers reinforces what children are learning about the harmful effects of drugs and opens opportunities for family discussions about the abuse of legal and illegal substances*" and that

> "*Brief, family-focused interventions for the general population can positively change specific parenting behaviour that can reduce later risks of drug abuse*" (all quotes, p 3).

Kumpfer, Alvarado and Whiteside (2003) found evidence of effectiveness for a number of types of family-based prevention approaches, including in-home family support, behavioural parent training, family skills training, family education and family therapy. These authors stated that family-based prevention approaches have effect sizes 2–9 times greater than approaches that are solely child focused (eg schools-based, peer-based, or individual-based) and they argue that "*effective family strengthening prevention programs should be included in all comprehensive substance abuse prevention activities*" (p 1759). Core components of family-focused prevention programmes which they identify include that they are: interactive, able to engage and retain hard-to-reach families, and aim to build the core elements of resilience.

Bolier and Cuijpers (2000, reported in Cuijpers, 2003) conducted a systematic review of family-based drugs intervention programmes, and identified seven such programmes which had mounted a controlled evaluation. The STARS (Start Taking Alcohol Risks Seriously) for Families programme undertook a randomised controlled trial of their intervention versus minimal intervention control with 650 school students (Werch et al, 1999, 2003b). They demonstrated the intervention's effectiveness at one year follow-up, with those in the intervention arm being significantly less likely to intend to drink in the next six months. It will be recalled that intention has been shown in the area of smoking initiation to be "*most proximal and important cognitive antecedent of behaviour*" (Wilkinson and Abraham, 2004 p 316), with meta-analytic studies showing that "*intention accounts for 20-30% of the variance in behaviour*" (p 316). Wilkinson and Abraham's study (2004) showed that intention, along with perceived ease of smoking, were the primary predictors of smoking behaviour six months later.

Jones et al (2007b), in their review of community-based interventions for the reduction of substance misuse among vulnerable and disadvantaged young people (which reviewed a very wide range of systematic reviews, randomised controlled

trials, controlled non-randomised trials, controlled before and after studies and before and after studies of selective or indicated community-based interventions that aimed to prevent or delay the initiation of substance use among vulnerable and disadvantaged young people, or which aimed to reduce or stop their substance use) concluded that, despite a wide variety of approaches producing improvements in substance use *knowledge and attitudes*, regardless of the type of population targeted, few interventions resulted in a reduction of use behaviours that lasted beyond the immediate post-intervention assessment phase. However, they concluded that, in general, for young people exhibiting multiple risk factors, family focused work showed most potential for success. Many parent and family focused interventions also produced significant improvements in some secondary outcomes of family functioning (including positive parenting styles and child behaviour). They also reported that they considered that this type of approach had high applicability, after suitable adaptation, to UK settings. However, Jones et al (2006b), in their review of universal drug prevention interventions, suggest that

> "*more research is needed to identify which types of family-orientated interventions are effective in the UK. This may include interventions to promote engagement of parents in drug prevention activities, interventions that help facilitate parent/child communication, and interventions that help to build parents' knowledge about and confidence of dealing with drug issues. The tiered approach, incorporating different levels of engagement, is useful to avoid stigmatisation of families*" (p 16, [4.12]).

There is some evidence that a *combination* of family- and child-focused approaches might work well. The best known example is the Strengthening Families Programme (SFP, eg Spoth et al, 2001, 2002a, b, 2004, 2005, 2008), which has been successfully evaluated, and subsequently replicated in different settings and with different groups (with replications in the UK currently underway (see eg Allen et al, 2007, 2008; Marsh et al, 2003; Ashton, 2004)). This programme is a US-based community programme for parents and their children (it primarily is a generic, primary prevention drug and alcohol problems prevention programme, although it has also been used with parents and their children where these children have already been misusing substances, and with parents and children where the parents are misusing substances).

The programme (developed by Spoth and Molgaard at Iowa State University) emerged from a major revision of the earlier Strengthening Families Program (SFP), developed by Kumpfer and associates at the University of Utah (Kumpfer, 1998). The original SFP was developed for substance-misusing parents and their children while they were still in elementary school (ages 6/7 through to ages 10/11) (Kumpfer, 1998). The current Iowa SFP has extended this both as a prevention programme for all families, irrespective whether the parents misuse substances, and aiming at the older age range of 10–14. The revised SFP programme aimed at young people aged 10-14 is named 'SFP-10-14'. The main features of this programme are that it has been extensively tested, with diverse audiences, across quite a wide age range of children (aged 6 up to 14) and families, in both rural and urban settings, and across a number of socio-cultural and ethnic groups within the USA.

The programme, which has components for each group (parents and children) independently, and for the two groups combined, runs over half-day weekly sessions for between 7 and 14 weeks. The programme is designed to develop a number of specific protective factors, and to work to reduce a number of specific risk factors. These include the development in parents of improved communication styles with their children, improved parental rule-setting, disciplining and management of inter-generational relationships, a more nurturing and supportive parenting style, greater school involvement, and a greater use of contingent parenting; and the development in children of positive goals for the future, a far greater incidence of following rules, improved family communication, improved relationship with parents, stress management, and skills for dealing with peer pressure and refusal of alcohol or drug offers.

There have been a number of evaluations of this programme (eg Molgaard and Spoth, 2001; Spoth et al, 2001, 2002a,b, 2003, 2004, 2005, 2008). As an example, one study (Spoth *et al.*, 2001, 2004) randomly assigned 667 families (who lived in areas with a high percentage of economically stressed families) to either the programme or a control condition; 447 of these families were followed up from the children's 6th through to their 10th grade (ages 11-12 to 15-16). Their findings included the following:

- Youth attending the programme had significantly lower rates of alcohol, tobacco and marijuana use compared to control youth.
- The differences between programme and control youth actually increased over time, indicating that skills learned and strong parent-child relationships continue to have greater and greater influence.
- Youth attending the programme had significantly fewer conduct problems in school than youth in the control group.
- Parents showed gains in specific parenting skills including setting appropriate limits and building a positive relationship with their youth.
- Parents showed an increase in positive feelings towards their child.
- Parents showed gains on general child management including setting rules and following through with consequences.
- Parents increased their skills in general child management such as effectively monitoring youth and having appropriate and consistent discipline.

Another study, an effectiveness trial of 118 families with substance misuse problems, randomised to SFP or care as normal, showed a range of significant effects, including on the substance use of children, the substance misuse parents, and the "*educational skills of parents, self-efficacy of the parents, social skills in the children, and improvements in family relations*" (Cuijpers, 2005, p 473). Another randomised trial (Spoth, Redmond and Shin, 2001) of two brief family-based interventions (Strengthening Families (using non-substance misusing parents) and Preparing for Drug Free Years) versus a minimal contact control found significant effects for both interventions in terms of onset of use (alcohol, tobacco and marijuana) and current use.

In a recent study (Brody et al, 2006), over 300 families completed a study where they were randomly assigned to be invited to participate in the SFP programme or to carry on as usual. Two years later 19 per cent of programme-assigned children had started to drink compared to 29 per cent of the controls, a significant difference. Gerrard et al (2006) examined the same study and tested whether these effects were due to the intended effects on parenting and on the children's attitudes. The effects were meant to be that enhanced parental monitoring and collaboration alongside clear rule making

and implementation (in particular about alcohol) would slow any growth in children's active *intentions* to drink. Alongside that, the programme aimed to foster less attractive images of young drinkers. Gerrard et al (2006) showed that it *was* through these mechanisms that the programme did seem to exert its restraining effect on age-related increases in drinking.

Because of results such as these, the Strengthening Families programme has come in for particular praise (eg Foxcroft et al, 2002, 2003) due to its long-term effects on postponing drinking initiation. The Number Needed to Treat[4] (NNT) for this programme over four years for a major postponement of three alcohol initiation behaviours (alcohol use, alcohol use without permission and first drunkenness) was 9[5]. This was the case for each of these behaviours: ie for every 9 young people who received the intervention, one fewer had initiated alcohol use, one fewer had initiated alcohol use without permission, and one fewer reported that they had ever been drunk. It has also been found that the increase in 'ever use' and 'ever been drunk' was lower in the intervention group than the control group at every follow-up up to four years, with increasing effect sizes, suggesting that the intervention intensified in impact over time. Nevertheless, Foxcroft et al suggest that this programme needs to be evaluated on a larger scale and in different settings, and that the SFP needs to be adapted and rigorously evaluated in different countries and cultural settings. This has started to occur within the UK: one UK study piloted SFP (10–14) in Barnsley using the USA specific materials and found very positive results (Coombes et al, 2006, 2009), and a further UK evaluation has adapted the US materials for British families and started to test their impact (Allen et al, 2007, 2008), reporting that both families and workers thought that the approach was workable in a UK context. Nevertheless, further research based on a randomised controlled trial design, with adequate sample size, is required to fully evaluate the potential of the programme in the UK (Allen et al, 2008).

[4] This is the number of people who would need to receive an intervention in order for 1 person to show positive effects (or in medical terms, the number of patients who need to be treated to prevent 1 adverse outcome). It describes the difference between treatment and control conditions in achieving a particular clinical outcome. It can be used to describe any outcome where event rates are available for both treatment and control.

[5] That is, 9 young people would need to receive the intervention in order for 1 person to show these positive effects, four years later, compared to controls.

A more important criticism is that most of the evaluations of the SFP have been undertaken by members of the SFP research group, and there is considerable evidence (from a very wide range of types of intervention) that more positive research findings are produced from evaluations conducted by the initial developers of an intervention. Further evaluations from completely separate research teams (as is occurring presently within the UK) should be encouraged.

However, one problem with the SFP is that of recruiting parents and children into the study, and retaining them: some of their results derive from just over a third of the eligible families, the remainder either not participating in the study or failing to complete all the relevant measures. Indeed, for universal family interventions, the main problem is recruiting parents, something found in UK studies of drug prevention programmes too (see Velleman et al, 2000). One reason for this might be that, despite the research evidence, parents do not have a strong sense of the importance of parental influence and modelling of behaviour on subsequent behaviour in their children. It would seem to be of primary importance to educate parents of their own behaviour in influencing young people's use of alcohol or drugs.

Velleman et al (2000) undertook an evaluation of five drug prevention programmes which involved parents, and which used a wide variety of approaches, including drugs awareness events, 'Living with Teenagers' and 'Parenting Teenagers' courses, interventions to raise self-esteem, peer education training, volunteer befriender schemes and parent–child shared learning. These projects showed that it is possible to recruit parents and secure their active participation, although most projects found it difficult to recruit the poorest or most marginalised parents, who did not attend school events or respond to discussion opportunities. Lack of time, money, childcare and fear of stigma were all barriers to involvement. The projects also found it difficult to recruit fathers, even though there was much evidence to show that boys wanted more communication about drugs from their fathers, and are influenced by their fathers' behaviour. The research found several positive effects on parents, including more accurate knowledge and realistic understanding of the potential of drugs prevention; greater confidence in communicating with their children, in positively influencing them and in coping with any drug-related behaviour. The evaluation concluded that a key task for such programmes is to improve parenting skills: many parents need to

develop confidence, communication skills and general understanding of young people through small, more intensive courses. Further, longer-term support is needed for families in difficulties. The evaluation concluded that more focused 'drugs' work should not be conducted at the expense of these vital activities. Velleman et al argued that drug prevention work involving parents needed to try to equip parents with three sorts of skills:

- parenting skills giving parents the skills to develop family cohesion, clear communication channels, high-quality supervision and the ability to resolve conflicts;
- substance-related skills providing parents with accurate information and highlighting the need to model the attitudes and behaviour they wish to impart;
- and confidence skills to enable parents to communicate with their children about drugs.

The SFP is not the only family oriented programme to show promise. Connell et al (2007), part of the Dishion group (see the multi-component sub-section below), describe an adaptive approach to family interventions which links engagement in a family-centred intervention to reductions in adolescent rates of substance use and antisocial behaviour. They randomly assigned 988 young people aged 11–17 to a family-centred intervention (n = 998) at age 11–12 and offered a multilevel intervention that included (a) a **universal** classroom-based intervention, (b) the Family Check-Up (**selected**; Dishion and Kavanagh, 2003), and (c) family management treatment (**indicated**)[6]. All services were voluntary, and approximately 25 per cent of the families engaged in the selected and indicated levels. Participation in the Family Check-Up was predicted by 6th-grade (age 11–12) teacher ratings of risk, youth reports of family conflict, and the absence of biological fathers from the young people's primary home. Relative to the randomised matched controls, adolescents whose parents engaged in the Family Check-Up exhibited less growth in alcohol, tobacco, and marijuana use and problem behaviour during all of the years

[6] A 'universal' prevention intervention is one that targets an entire population without regard to their specific risk of the thing to be prevented; a 'selective' intervention targets those who have a heightened risk of the thing to be prevented (eg in this scenario, children of problem-drinking parents); and an 'indicated' intervention targets those who are already showing signs of problems (eg in this scenario, young people already drinking heavily).

between ages 11–17, along with decreased risk for substance use diagnoses and police records of arrests by age 18.

Another of Dishion's programmes (the Adolescent Transitions Program (ATP), Dishion and Kavanagh, 2000) is a tiered, multi-level (universal, selected and indicated) family-centred prevention strategy that has been tested in a number of controlled studies. One (Dishion et al, 2002) allocated nearly 700 middle school students and their families to ATP or a control condition. Despite (again) poor engagement in the selected and indicated interventions, results at follow-up showed that the cost-effective intervention "*reduced initiation of substance use in both at-risk and typically developing students*" (p191; with 'substance use' meaning in this paper drinking alcohol and smoking cigarettes). Given evidence that integrated prevention strategies are more effective than single ones (Cuijpers, 2003), such programmes as this, using family-centred integration into school-based drugs prevention, are important.

One other study is worth mentioning, in that it demonstrates that intervening with parents in order to prevent problematic alcohol-related behaviour does not have to be confined to children's childhoods or early adolescence, is that by Turrisi et al (2001). They examined the short-term efficacy of a parent intervention to reduce the onset and extent of binge drinking during the 1st year of college (ie the students were aged 18, and hence all below the legal drinking age in the USA). The approach was based on influencing the students before they started college, through their parents, during the critical time between high school graduation and the beginning of college. Specifically, parents were educated about binge drinking and how to convey information to their teenage children, and then encouraged to talk with their children just before they embarked on their college education. Teenagers whose parents implemented the intervention materials were compared with a control sample during their 1st semester on drinking outcomes, perceptions about drinking activities, perceived parental and peer approval of drinking, and drinking-related consequences. They found that young people in the treatment condition were significantly different on nearly all outcomes in the predicted directions (eg lower drinking tendencies, drinking consequences). Because these young people, although aged 18, were below the legal drinking age in the USA, it may imply that such results from such an

intervention in the UK might occur if such an intervention were to be delivered at a younger age.

Most of these family interventions have been relatively complex, aiming to improve a wide range of family, parent–child and parenting behaviours. However, a much simpler short-cut has been suggested. The recent CASA study (2007) suggested, on the basis of research showing a close association between regular and frequent eating of dinner together as a family and reduced levels of substance use, that the single most important thing that parents needed to do was to ensure that the family regularly and frequently (five times per week or more) ate dinner together. (The CASA (2007) study showed that children eating dinner with their families five or more times per week seemed to effectively protect them not only from substance misuse, but also from poor school and academic performance, shown to be an independent factor related to many poor outcomes, including early substance misuse.)

Obviously, there are methodological problems with this study (as there always are with studies), and obviously when looking at correlations (the two variables correlated, from which one cannot impute causality), there may be another variable or set of variables which are causing the observed interaction. Equally obviously, 'family dinners' are clearly not the issue! No-one would suggest that the simple fact of eating a meal leads to a lower risk of substance misuse! It is very likely that the intervening set of variables are exactly some of the family and parenting ones that are focused upon in the family-based interventions described above, and which are reviewed in detail in the earlier sections of this review. But what is likely to occur when families eat together every or almost every night is that all the other important variables also increase: there is likely to be greater family communication, greater family joint activity, the family unit is more likely to gel together as a whole, family monitoring of their children's behaviour is likely to increase, it is more likely that family rules about substance misuse might be discussed, parental approval or disapproval for various behaviours might be increased and made more explicit, etc. So it is likely that families who do all of these things, also tend to eat together as well. Unfortunately, while providing an opportunity for many of these factors to flourish, simply eating together may not suffice.

Nevertheless, it may be that persuading families to eat together could work as an important proxy for these other vital family factors, and one that is far easier to encourage in the general population than re-training communication, rules, contingencies, etc – the range of family factors examined in the earlier part of this review and utilised in many of the family interventions outlined above.

There is a further point here which needs to be made about the wider benefits of parenting programmes. The focus in this present review has been on using these parenting programmes as a way of prevention early alcohol use and subsequent problems. But it should be noted that such parenting programmes have many other significant benefits to both young people, and society. For example, the Adolescent Transitions Program (ATP) is specifically predicated (Dishion and Kavanagh, 2000) on the idea that parenting practices can serve a protective function within a disrupted community; that by enabling parents to utilise greater levels of parental supervision, they may be better able to protect their young people from escalating patterns of problem behaviour in high-risk neighbourhoods; that by supporting the caregivers' use of behaviour management skills and building strong parent–child relationships, they will be able to reduce early oppositional problems in the preschool years, antisocial behaviour in middle childhood, and problem behaviour (as well as substance use) in early adolescence. The ATP is but one example – all of the family-based programmes examined in this review utilise inputs which are predicted to lead to stronger family processes and structures, which in turn affect not simply their young people's future use of alcohol (and drugs), but their present and future values, self-esteem and stability, as well of course as impacting on the overall 'culture of parenting', with the consequent possibility of affecting future generations of parenting. In some ways, the fact that these programmes are often funded within the USA by NIAAA (the National Institute of Alcoholism and Alcohol Abuse) or NIDA (the National Institute of Drug Abuse) is an oddity, explicable by programme designers and researchers following the funding: if funding existed to develop more general prevention programmes, they might equally have been funded by these funding streams.

Direct work with young people

There is also some (although less strong) evidence that interventions which enhance young people's social skills, and / or utilise peers and / or work to develop individual's ability to withstand peer pressure, can be effective.

Three related areas will be examined here: skills enhancement, peer interventions, and interactions with an individual's personality. Most of these interventions aimed specifically at young people are undertaken in schools. There is some evidence that work at the overall school level may be effective (and this is discussed in the following main section, on the media and culture), but the programmes described here are not overall school-level ones. Instead, they are focused on young people's interactions, and they take place in schools primarily because these are places where young people can easily be accessed; and where they can practise the social interactions on which these programmes are designed to impact.

Enhancing young people's social and refusal skills[7]

Stead et al (2006) found only one study of long-term impact (over two years) on alcohol use which involved the enhancement of young people's abilities to refuse offers of substances, and of other skills young people need to effectively negotiate adolescence and deal with social influences, among other components. This was Project Northland (Perry et al, 1996), a 3-year programme which involved the school curriculum, peer and parent activities and community taskforces. They found a significant impact on past month and past week alcohol use ($p<0.05$ for each) in the intervention group compared with the control group at 2.5 years, although the effect had dissipated at 4 years. This will be discussed further in the multi-component section, below. Stead et al (2006) did find evidence for medium-term effects (1 to 2 years) for 2 other programmes based on skills enhancement work: the Dutch school programme (Cuijpers et al, 2002; Smit et al, 2003), where, in a trial of a 3-year school-based programme, they found a significant impact on daily alcohol use at immediate post-test and at two years after the start of the intervention, and also a significant decrease in number of drinks consumed per occasion at both follow-ups;

[7] These programmes aim to address direct and indirect pressures to use substances. They usually involve the practice of resistance and other skills which young people need to effectively negotiate adolescence and deal with social influences.

and Project SMART (Hansen et al, 1988), a school-based social influences programme, which found lower alcohol use onset among students who received the intervention compared with control group students at 1 and 2 year follow-ups.

Skara and Sussman (2003) were more positive after their review, where they examined 25 long-term adolescent tobacco and other drug use prevention programme evaluations. They specifically restricted their review to published programme evaluation studies that followed adolescents across the transitional period between junior high and high school (the transition occurs between ages 13–14 and 14–15) for a period of at least 2 years. They concluded that the majority of the 25 studies deemed suitable for examination reported significant programme effects for long-term smoking, alcohol, and marijuana outcomes, while indicating a fairly consistent magnitude of programme effects. All but one of these prevention projects was school-based, with the final one, adapted from a school-based curriculum, being delivered through youth clubs (the Boys & Girls Clubs of America). Five of these studies complemented prevention efforts in the schools with a community component that involved intervention programming through such channels as parents, mass media, or health policy change. The main focus of their review was on smoking incidence and prevalence. Of the 9 studies that provided long-term assessments of other drug use (including alcohol incidence and prevalence), two-thirds (6 studies) reported positive programme effects (Botvin et al, 1995; Cuijpers, 2002a and Smit et al, 2003; Pentz et al, 1989, 1990, unpublished; Shope et al, 1998; St Pierre et al, 1992; Taylor et al, 2000). Skara and Sussman reported that the magnitude of effects was fairly consistent across all of the individual studies, adding further to the evidence indicating that the prevention approaches were effective in preventing or reducing tobacco and other drug use, and stated that the results indicated that programme effects were less likely to decay among studies that delivered booster programming sessions as a supplement to the programme curricula. Of the studies that provided booster sessions, the majority had maintained long-term reductions for all three substances (cigarette, alcohol, and marijuana use) at final follow-up testing. More specifically, they found that preventive effects were maintained over the long term for 75% of the interventions that assessed alcohol or marijuana use, that had demonstrated initial effects from their programme.

On the other hand, Foxcroft et al (2003) concluded from their systematic review that a number of studies that had evaluated educational and psychosocial prevention programmes showed evidence of *in*effectiveness. They stated that those that reported longer-term evaluations (over three years follow-up) were examined in more detail, and several promising studies were re-analysed to provide a better indication of the potential impact of the prevention programme. On the basis of this re-analysis, they concluded that none of the school-based or peer-based interventions were effective, and that all of the studies included in their review showed some methodological weaknesses, implying that it is therefore necessary to replicate these studies with more robust design and analysis, and across different settings.

Jones et al (2007b), in their review of community-based interventions for the reduction of substance misuse among vulnerable and disadvantaged young people, concluded that school-based interventions were the most popular type of intervention, and skills training the most frequently evaluated model (whether programmed or generic). They suggested that there was mixed evidence with regards to the success of this type of approach, with the balance of evidence suggesting that life skills approaches were associated with immediate and medium-term (although *not* with long-term) reductions in substance use. They specifically suggest that, although much of the evidence is conflicting or contradictory, there is evidence that

- when delivered as a stand-alone intervention, life skills approaches may produce medium-term reductions in substance use, with some evidence to suggest that this effect may be strongest in girls;
- delivering generic life skills with family components can produce both immediate and medium-term reductions in alcohol use and frequency;
- such life skills programmes can produce long-term decreases in young people's association with substance using peers;
- and there may be some long-term effects when delivered either as a discrete stand-alone intervention or throughout the school year infused within the regular curriculum compared with no intervention.

They do, however, sound a note of caution, pointing out that across relevant studies there was a heterogeneous population, and a high rate of attrition. Furthermore, there were often inconsistent effects of school-based skills training on substance use

attitudes and norms, meaning that more work is needed to identify underlying determinants of success (eg was success due to the attention paid, and support given, to vulnerable young people rather than to the content of the programme delivered?).

Jones et al (2006b) in their review of Universal Drug Prevention, show that school-based interventions are the most popular and widely researched method of delivering universal drug prevention programmes. Their review suggests that Life Skills Training (LST), or approaches based upon it, is one of the few programmes that has demonstrated a small but positive effect on reducing indicators of drug use.

Notwithstanding these conflicting results, this present review does conclude that there is some evidence that school- and peer-based interventions are sometimes effective, and that the LST approach, developed in the USA by Botvin and colleagues (2001), which teaches social resistance skills and general personal and social competence skills, may be the most promising of these interventions.

Life Skills Training's publishers describe it as a '*substance abuse prevention/ competency enhancement program designed to focus primarily on the major social and psychological factors promoting substance use/abuse*' (Stothard and Ashton, 2000, p 6). It is school-based and consists of 15 45-minute classes delivered either in the equivalent of year seven (ages 11–12) or year eight (ages 12-13), followed by ten and then five booster sessions in the next two years. Specific aims are to: provide the skills to resist social (peer) pressures to smoke, drink and use drugs; help develop self-esteem, self-mastery, and self-confidence; enable children to effectively cope with social anxiety; increase knowledge of the immediate consequences of substance use. The lessons cover: personal self management skills (solving problems, managing emotions, achieving goals); social skills (communication, interacting with others, boy/girl relationships, assertiveness); drug-related information and skills (knowledge, attitudes, normative expectations, skills for resisting drug offers, media influences, advertising pressures to use drugs).

Botvin et al (2001) provided a one- and two-year follow-up of LST, measuring its effectiveness in reducing binge drinking in a sample of 3,000 minority, inner-city, middle-school (11–12 to 13–14) students, 1,713 of whom received the programme at

the start of their 7th grade (11–12) and 1,328 of whom did not. The prevention programme had protective effects in terms of binge drinking at the 1-year (8th grade, 12–13) and 2-year (9th grade, 13–14) follow-up assessments. The proportion of binge drinkers was over 50 per cent lower in the intervention group relative to the control group at the follow-up assessments. There were also several significant programme effects on other drinking variables, including drinking knowledge, pro-drinking attitudes, and peer drinking norms. The authors suggest that these findings indicate that a school-based drug abuse prevention approach previously found to be effective among White youth significantly reduced binge drinking among urban minority youth.

Botvin et al (2003) were interested in seeing if LST could also be effective in younger age ranges, examining the effectiveness of LST preventing tobacco and alcohol use among elementary school students in grades 3 (age 8–9) through 6 (11–12). Rates of substance use behaviour, attitudes, knowledge, normative expectations, and related variables were examined among 1,090 students from 20 schools that were randomly assigned to either receive the prevention program (9 schools, n = 426) or serve as a control group (11 schools, n = 664). Data were analysed at both the individual level and school level. Individual-level analyses controlling for gender, race, and family structure showed that intervention students reported less smoking in the past year, higher anti-drinking attitudes, increased substance use knowledge and skills-related knowledge, lower normative expectations for smoking and alcohol use, and higher self-esteem at the post-test assessment, relative to control students. School-level analyses showed that annual prevalence rate was 61 per cent lower for smoking and 25 per cent lower for alcohol use at the post-test assessment in schools that received the prevention programme when compared with control schools. In addition, mean self-esteem scores were higher in intervention schools at the post-test assessment relative to control schools. Botvin et al suggest that their findings indicate that LST, previously found to be effective among middle school students, is also effective for elementary school students.

Research on LST has not only been conducted by the creator of the intervention (Botvin). Trudeau et al (2003) evaluated the effects of LST, a school-based preventive intervention, on growth trajectories of substance initiation (alcohol, tobacco, and

marijuana), expectancies, and refusal intentions in a rural midwestern USA sample of 847 young people, over three waves of data collection. Growth curve analyses demonstrated that the intervention significantly slowed the rate of increase in substance initiation and significantly slowed the rate of decrease in refusal intentions. The intervention also slowed the rate of decrease in negative outcome expectancies, although the significance level was only marginal. Gender differences also were found, although the intervention was effective in slowing the rate of increase in initiation for both genders.

The Life Skills Training model is extremely widely used, and these results above suggest that it is at least partially effective (although Foxcroft et al (2002, 2003) argue that evidence for the programme is less than convincing, and that policy makers and practitioners should be informed of this finding, given the widespread acceptance and use of LST). Stothard and Ashton (2000) argue that, for drug prevention, the importance of Botvin's work on the creation and evaluation of this model "*cannot be overstated. In any research-based guide, including official advice in the UK, it features as the most solid justification for school lessons about drugs, a breach in the otherwise largely justified pessimism*" (p 4).

Stothard and Ashton (2000) summarise what they consider to be the positive and negative aspects of LST. They show that LST *can* result in lasting curbs on regular smoking, multi-drug use and problem drinking which could help preserve physical health throughout life. However, they argue, there is insufficient consistency in the findings to be confident that implementing Life Skills *will* cut legal or illegal drug use, only that it *can do* and *has done*, most consistently in relation to smoking. They argue that keys to the programme's successes seem to be its intensity, use of booster sessions, interactivity, emphasis on skills, and its potential for delivery by peer leaders. When it does achieve positive effects, these seem to be gained by correcting misconceptions about the normality and acceptability of drug or alcohol use, improving substance-related knowledge and assertiveness in using substance refusal skills, and heightening anti-drug or other substances attitudes. For LST, the evidence is strongest in relation to heavy smoking and drinking to intoxication.

Commentators have called attention to the fact that USA programmes (including LST) are abstinence-oriented. One study from Australia which looked at non-abstinent outcomes, is also worth mentioning. McBride et al (2003) developed SHAHRP (School Health and Alcohol Harm Reduction Project), and studied its effects on over 2,300 intervention and control young people in metropolitan, government secondary schools (13-–17-year-olds) in Perth, Western Australia. The intervention was a classroom-based programme, with an explicit harm minimisation goal, and was conducted in two phases over a 2-year period. The results were analysed by baseline context of alcohol use to assess the impact of the programme on students with varying experience with alcohol. Knowledge and attitudes were modified simultaneously after the first phase of the intervention in all baseline context of use groups. The programme had little behavioural impact on those who were 'supervised drinkers' at baseline; however, those who were either non-drinkers or unsupervised drinkers at baseline were less likely to consume alcohol in a risky manner, compared to their corresponding control groups. Early unsupervised drinkers from the intervention group were also significantly less likely to experience harm associated with their own use of alcohol compared to the corresponding control group. Unsupervised drinkers experienced 18.4 per cent less alcohol-related harm after participating in both phases of the programme and this difference was maintained (19.4 per cent difference) 17 months after the completion of the programme. The authors conclude that these results indicate that a school alcohol education programme needs to be offered in several phases, that programme components may need to be included to cater for the differing baseline context of use groups, that those who were non-drinkers or unsupervised drinkers at baseline became less likely to consume in a risky manner, and that early unsupervised drinkers experience less alcohol-related harm after participating in a harm reduction programme.

Although most prevention studies in the USA are abstinence oriented, Wynn et al (2000) undertook longer-term preventative work which recognised that young people *would* drink, and worked very successfully to reduce future alcohol-related problems. They concentrated on correcting unrealistic beliefs about how normal drinking is – the 'everyone's doing it' fallacy. This programme is part of the Alcohol Misuse

Prevention Study (AMPS), a study begun in 1983, with very large samples of schoolchildren followed up for several years, and with a focus on reducing alcohol *problems* rather than alcohol use, and was reviewed by Ashton (2000), which has informed this present summary.

Wynn et al (2000) followed up over 3,000 young people from grade six (aged 11–12) to grade 10 (age 15–16). The AMPS curriculum begins in grade six with eight 45-minute lessons followed over the next two years by nine 'booster' sessions. Its aim is to reduce the growth of alcohol problems by improving pupils' abilities to identify and resist peer influences. A separate analysis suggested that the lessons did retard growth in alcohol problems (such as getting drunk or sick or attracting complaints from parents and friends) but *only* among the minority who had already drunk without adult supervision. Since these were also the pupils with the greatest alcohol problems, the curriculum showed promise for preventing future serious alcohol disorders. Similar results were found four years earlier using a less well-developed version of the same curriculum. Further analyses attempted to identify how the lessons achieved their impact on drinking problems. The earlier study had found that the lessons worked partly by bolstering pupils' endorsement of reasons not to drink and reducing their susceptibility to peer pressure. Wynn et al (2000) tested two further mediating variables: refusal skills (pupils' ability to convincingly turn down an offer of alcohol from a friend) and normative beliefs (pupils' estimates of how common drinking is). Refusal skills (which unusually were assessed by direct observation in role play rather than by questionnaire responses) were improved by the programme. However, these were *not* related to overindulgence in alcohol nor did they account for the curriculum's impact on drinking. Unlike refusal skills, from grade seven (age 12–13) upwards, pupils' overestimation of how common drinking was among their peers and among adults *was* related to excessive drinking. Moreover, especially among older pupils (roughly aged 13–14), the programme's correction of these beliefs partly accounted for its impact on excessive drinking. It seems likely that while in some circumstances refusal skills do play a role, correcting normative beliefs is the more powerful way to affect adolescent overindulgence in alcohol, and is easier to achieve in school lessons.

Similar findings have come from other studies, including a large scale US study which found that a seventh-grade curriculum which focused on correcting normative beliefs reduced alcohol, tobacco, and cannabis use relative to simply giving pupils information about the consequences of drug use (Hansen et al, 1991; Palmer et al, 1998). As Ashton (2000) concludes, the clearest implication from this and related studies is that school programmes which aim to have a preventive impact must incorporate information which corrects inaccurate beliefs about the normality and acceptability of alcohol use, and here he suggests that it would be more logical to focus on correcting incorrect beliefs about the frequency of drinking too much, rather than drinking itself. This present reviewer does not agree with this analysis, and this will be returned to below.

The review above on skills enhancement has focused primarily on more promising approaches: those which have shown at least partial success in evaluations. Other schools-based work has failed to provide convincing evidence of its effectiveness. A randomised trial of the DARE drug prevention curriculum for pupils of secondary school age found its police-led lessons to be ineffective (Perry et al, 2003). 93 per cent of the 6,728 seventh or eighth grades (age 12–14) pupils were surveyed immediately before the programmes started and 84 per cent of these were resurveyed in the eighth grade after they had ended. On no measure of drug use (alcohol, tobacco and cannabis) did DARE-only schools improve in comparison to the control schools, with the same being true of attitudes, intentions, beliefs or experiences thought to be related to drug use or violence. This study also compared DARE with an augmentation of DARE (DARE+), which added to the school-based lessons teaching and activities which involved parents, pupils and communities as active participants (Perry et al, 2003). Here (for boys only), DARE+ was more effective: the programme significantly retarded the growth in drinking and smoking and in experience of physical victimisation for boys, and it also led to significant or near-significant improvements in variables thought to be related to drug use such as beliefs about the prevalence of use, experienced availability of drugs, expectations of effects from smoking, and parental rule-setting, as well as measures related to a propensity to violence. On the other hand, among girls, neither DARE programme improved on the control schools.

Peer interventions

The studies and reviews examined above have looked at school-based, skills oriented, interventions. Another approach at the peer level is that of programmes aimed specifically at influencing how peers interact, often by using peer educators or peer support. The concept of peer education has been used for several decades; the term itself suggests that young people of the same age, sex, and interests provide activities to others at school (or in the streets, slums or the community). The idea is that these young people, given the right training, can positively influence each other. Peer education built on the premise that young people have the power to influence and positively change others' attitudes and social values and ultimately the behaviour of colleagues – their peers – once given the necessary knowledge, information, and skills. This has also been found to be a useful prevention approach because people of the same age group feel free to talk to each other. Young people feel that their colleagues are more understanding of their situations and problems or challenges than adults who are more distanced from their reality. Peer to peer youth prevention of substance use or misuse also aims at creating an enabling environment for discussions of the issue, and of exploring and providing alternatives to use. It is argued that it helps change attitudes and misperceptions, and that these young people will spend more time with each other and often will talk together at the very time when the incident is about to take place or the time when real action is desired to affect behaviour. Many examples exist of peer education in many aspects of behavioural change programmes for young people especially in HIV/AIDS, outreach, and drug equipment provision.

There is however some evidence to suggest that peer support programmes do not always work. So, for example, Webster et al (2002) evaluated the effects of a peer support programme on adolescents' knowledge, attitudes and use of alcohol and tobacco. 169 year 7 students (average age 12 years) from three schools who offered the programme and 157 students from three schools without the programme completed a self-report assessment. The main findings were that there were no significant effects of the programme on participants' knowledge, attitudes and use of alcohol or tobacco. Over time, participants in both groups reported increased enjoyment of alcohol, increased use of alcohol and tobacco and more lenient attitudes towards these substances from their parents and other adults.

Similarly, Sumnall et al (2006) in their review of drug prevention, showed that findings are mixed with regard to the effectiveness of peer-led education. They suggest that "*it appears that the child or young person delivering the intervention tends to benefit most from the experience. Based on results from one meta-analysis, the use of peer educators was found to be an effective characteristic of multi-component programmes that had 'strong evidence' of effectiveness. However, this positive effect only seems to be supplementary. Evidence suggests that peer educators can only help increase the effectiveness of an already successful programme, and that the effect may be relatively short-lived*" (p 23).

On the other hand, the USA Department of Health and Human Services issued a fact-sheet in 2002 (SAMHSA, 2002) arguing that there were "proven results" from a programme named 'Protecting You/ Protecting Me' (PY/PM), a 5-year, classroom-based, alcohol-use prevention curriculum for elementary students in grades one to five (ages 6 to 11), delivered by trained high school students, with the results being significant effects on the behaviour of those trained to deliver the intervention: the high school students teaching PY/PM. Those students delivering the intervention showed significantly less usage over the past 60 days (as compared to their peers who were not trained and did not deliver the intervention) of liquor (64 per cent less), beer (45 per cent), wine coolers (42 per cent), wine (17 per cent); as well as less binge drinking (72 per cent less) and an increase in perceptions of the harmfulness of underage alcohol use (32 per cent increase).

Similarly, McGrath et al (2006b) in their review of reviews of drug use prevention among young people showed that about half of the programmes that showed positive outcomes for cannabis use (which were all based on the social influence model and where most were multi-component) used peer educators as well as adults.

To further complicate matters, Valente et al (2007) have shown interaction effects between peer education and the makeup of their existing social / peer networks. In a classroom randomised controlled trial comparing control classes with those receiving an evidence-based substance use prevention program [Towards No Drug Abuse (TND)], and TND Network, which is a peer-led, interactive version of TND, 541 young people (mean age 16.3) in 75 classes from 14 high schools completed surveys

before and approximately one year after programme delivery. Overall, TND Network was effective in reducing substance use. However, the programme effect interacted with peer influence and was effective mainly for students who had peer networks that did *not use* substances. Young people with classroom friends who use substances were more likely to *increase* their use. The authors conclude that a peer-led interactive substance abuse prevention programme can *accelerate* peer influences. For young people with a peer environment that supports non-use, the programme was effective and reduced substance use. For students with a peer environment that supports substance use, an interactive programme may have deleterious effects.

These are not the only conflicting results in this area. Harden et al (1999) and Posavac et al (1999) both addressed the effectiveness of peer-delivered health promotion interventions. In the youth smoking context, Posavac et al reported small positive effects while Harden et al found three positive outcome studies, one unclear and one that demonstrated that a peer-led intervention was ineffective. However, many young adults have a positive view of peer-delivered health behaviour change initiatives. Harden et al found some evidence of greater effect in females, and that 'peer educators' are most likely to be high achieving young women.

Interactions with an individual's personality

Another approach to school-based interventions has been provided by Conrod et al (2007) who used personality theory to target an intervention at those young people who had what the researchers considered to be personality-based risk factors for substance misuse (ie if their questionnaire scores were high on one of four personality risk subscales: negative thinking, anxiety sensitivity, impulsivity, and sensation seeking). In fact, they obtained their best results for those young people (median age 14) with the 'sensation seeking' [SS] personality risk factor. They undertook a randomised control trial with 368 adolescents recruited from years 9 and 10 (median age 14) with these personality risk factors for substance misuse, with participants receiving either a personality-targeted intervention or no intervention. The intervention was manualised and consisted of three main components: psycho-educational, motivational interviewing, and cognitive-behavioural. The sessions involved guided goal-setting designed to enhance participants' motivation to explore ways of coping with one's personality; psycho-educational strategies to educate

participants about the target personality variable (depending on which personality risk subscale they were high on) and the associated problematic coping behaviours, such as interpersonal dependence, avoidance, aggression, risky behaviours and substance misuse; and guided cognitive-behavioural work in analysing a personal experience according to the physical, cognitive and behavioural components of an emotional response. All exercises discussed thoughts, emotions and behaviours in a personality-specific way. Participants were encouraged to identify and challenge personality-specific cognitive distortions that lead to problematic behaviours (eg the sensation seeking [SS] intervention involved challenging cognitive distortions associated with reward-seeking and boredom-susceptibility).

Multi-group analysis of a latent growth curve model showed a group difference in the growth of alcohol use between baseline and 6-months follow-up, with the control group showing a greater increase in drinking than the intervention group for this period. Interventions were particularly effective in preventing the growth of binge drinking in those students with a SS personality. Sensation seeking drinkers in the intervention group were 45 per cent and 50 per cent less likely to binge drink at 6 and 12 months respectively, than SS drinkers in the control group (ie the Number Needed to Treat was 2.0).

They also report that analysis of binge drinking behaviour revealed effect sizes for the intervention and control group comparisons that were larger than effect sizes obtained from other effective prevention and early intervention programmes (Foxcroft et al, 2002; Tobler et al, 2000). Moreover, effect sizes for the group at greatest risk for binge drinking, sensation seeking [SS] drinkers, were found to be double that of any effect size reported for a youth alcohol prevention programme (Foxcroft et al, 2002). As seen in a previous sub-section, the Strengthening Families Programme is one of the few universal alcohol prevention programmes that have been shown to be effective, and their NNT values ranged from 9 to 12 (Foxcroft et al, 2002). Conrod et al (2007), however, and a previous study with older adolescents (Conrod et al, 1998) showed that the personality-targeted approach yields NNT values that ranged from 2 to 5 (ie, if NNT is 2, this means that only two SS interventions need to be delivered in order to prevent one case of binge drinking 6 months later). The authors also state that the effects of the SS intervention persisted for the most part through the full 12-month

follow-up period. They argue that this is particularly important, in that effective brief interventions for alcohol misuse that do yield large effects tend to do so in the first few weeks post treatment, but these effects often disappear between 6 and 12 months post intervention, suggesting that the personality-targeted approach may out-perform alternative approaches to reducing and preventing youth alcohol misuse. They suggest that this intervention strategy may prove effective in preventing the onset of adult alcohol use disorders, by helping high-risk youth delay the growth of their drinking to a later developmental stage.

Direct work with young people: conclusions

Notwithstanding the conflicting results reported above, this present review does conclude that there is some evidence that direct work with young people, delivered primarily in school settings and using skills-, peer- and personality-based interventions, is sometimes effective. In particular, this present review concludes that the LST approach, developed by Botvin and colleagues, which teaches social resistance skills and general personal and social competence skills, may be the most promising of these interventions, alongside the personality-based intervention developed by Conrod et al, 2007.

Nevertheless, generally (with the exception of Conrod et al, 2007), effect sizes are relatively small, and many studies produce conflicting results. In comparison, then, with family-based interventions, these skills enhancement and peer based interventions are less effective, in terms of having a longer-term impact.

It is, however, not surprising that family-based interventions tend to have a longer-term effect, whereas school- and peer-based ones do not. For very many people, the family is much more constant that a friendship group; and changes in the way that the family functions (which these family-based interventions create) will continue to reverberate within that family for much longer than will changes in the specifics of how peers relate with each other, especially as these will change as peers change, and as children grow, mature and develop. Once family relationships change, the new ways of being together will continue, but changes in friendships will only last as long as the friendships last.

Advertising, media, culture, and social/cultural norms

The third main area of influence on how children learn about and acquire attitudes, expectations and intentions towards alcohol is that of advertising, the media, culture, and social or cultural norms.

Unfortunately, it is a great deal harder to develop intervention programmes to counter these effects.

Advertising and media

Ellickson et al (2005) have undertaken one of the few studies in this area. As outlined in the previous section on the impact of advertising, they showed that for seventh-grade (aged 12–13) non-drinkers, exposure to in-store beer displays predicted drinking onset by grade 9 (14–15); for seventh-grade drinkers, exposure to magazines with alcohol advertisements and to beer concession stands at sports or music events predicted frequency of grade 9 drinking. What they also showed was that participation in the prevention programme, ALERT Plus, reduced future drinking for both groups and counteracted the effect of in-store beer displays, implying that alcohol prevention programmes and policies may help children counter alcohol advertising from multiple sources and limit exposure to these sources. The authors describe ALERT Plus as a programme which seeks to motivate students against using drugs and to give them the skills they need to translate that motivation into effective resistance behaviour. The curriculum seeks specifically to change students' beliefs about norms for drinking and taking other drugs and the social, emotional and physical consequences of using alcohol and other drugs; to help them identify and resist pro-drinking, pro-drug pressures from the media, parents, peers and others; and to build resistance self-efficacy, the belief that one can successfully resist pro-alcohol (or other drug) influences. Specific media lessons focus on identifying different types of advertising (eg television commercials, billboards, in-store displays, advertising at special events, promotional items, print media), countering the persuasive appeals used by alcohol advertisers, understanding how pricing, promotion and packaging are designed to affect use, and learning how advertisers have used appeals for targeting different groups over the years.

Studies such as these are extremely rare, especially in the UK. Jones et al (2006b) in their review of Universal Drug Prevention have stated that they found "*a lack of robust evaluations of UK-based universal drug prevention programmes*" (p 24, 8.5), and argued that "*more research is required to elucidate the effectiveness of community-based programmes including mass media campaigns as a part of multi-component drug prevention programmes*" (p 3).

One area which relates to this issue of challenging the influence of advertising and general media coverage of alcohol is the work discussed below in the section on social norms, on challenging false impressions about how normative drinking and bingeing really are (eg Wynn et al, 2000; Ashton, 2000 and Palmer et al, 1998), where both these interventions had substantial positive effects.

It is clear however that there are major problems in undertaking good (or even any) research in this area of preventing the impact of advertising. Such research requires costly longitudinal studies, the ability to randomly allocate young people to interventions with little contamination between them, and many other necessities, all of which put them beyond researchers within the UK, and beyond most researchers, even in the USA. Further, whereas with the other major areas (influence of family, of peers) it is relatively easy to see what any intervention programme needs to do and there are only a few ways to actually implement those interventions, in trying to counter the influence of something as pervasive as advertising and media representations of alcohol, it is far less clear both precisely what the interventions need to do, nor how they should go about doing that.

Culture: Intervention programmes and ethnicity and religion

Another global influence on alcohol, in the same vein as advertising and the media, is the impact of cultural factors, reviewed above, including ethnicity and religion.

A number of reviews and studies have looked at the role of ethnicity in intervention programmes (Taylor et al, 2007; Mulvihill et al, 2005; Harrop et al, 2006). In general, reviewers suggest that there is a lack of evidence on the effectiveness of interventions targeting specific socio-economic, ethnic or vulnerable groups.

In terms of ethnicity specifically, there is a lack of robust research evidence on the extent to which ethnic minorities can benefit from culturally specific health behaviour change interventions, although there may be some limited evidence that appropriately tailored interventions can have enhanced effectiveness in some areas. Although there is evidence from the USA that positive racial or ethnic identity can act as a protective factor, which in turn can foster educational resilience, it is very uncertain how generalisable such findings are to the range of UK contexts. Nevertheless, USA studies have found that general interventions programmes developed with White populations could usefully be implemented (without requiring cultural tailoring) with members of minority ethnic groups: such intervention programmes include school-based interactive ones, delivering interventions in combination with parent workshops, and family-based interventions. One review of the grey literature (McGrath et al, 2006a) on drug prevention among young people did find predominantly UK-based research, which suggested that drug prevention programmes that are effective for young White people are similarly effective for Black and minority ethnic populations, although adding components which increase the cultural sensitivity of the programme can enhance their effectiveness.

None of the reviews found any studies which addressed engagement of ethnic minority populations with interventions, something which has been highlighted to be a problem in the UK. There is clearly a need also to undertake primary research on interventions to reduce alcohol use and misuse, and to evaluate their effectiveness, among minority ethnic groups, particularly among a range of different groups from the Indian sub-continent, different groups from Africa, and among African-Caribbeans. One specific recommendation is that primary research should be undertaken on the effectiveness of brief interventions to reduce alcohol misuse aimed specifically at various minority ethnic groups, particularly among Asians and African-Caribbeans, and at specific religious ethnic groups such as Sikhs, Hindus and Muslims.

Intervention programmes and religion

As with ethnicity, a number of reviews and studies have looked at the role of religion in intervention programmes. Harrop et al (2006) argue that evidence exists to show

that religious beliefs work both as an individual level protective factor, and at a community level implicating a relationship between religion and health. They suggest that there is evidence of a positive relationship between religious involvement or religiosity and positive outcomes including health, mental health, reduced substance use, competence, and educational attainment. They state that, overall, the studies cut across different religious and ethnic groups, although a bias towards Christian groups was reported in one review and seems likely in the others given the ethnic composition of the groups under consideration in these USA studies (eg Hispanic, African American, USA White). It is also the case that many families of resilient children hold religious beliefs, with an implication that these may provide stability and meaning to lives (Werner, 2000).

It may be thought that religion is not amenable to preventative interventions. But because there is some evidence that religious beliefs and involvement can work as a protective factor (religion and faith in God are among the protective factors shown in Table 1, at the end of this Review), it may be that prevention programmes and interventions *should* be developed which encourage greater religious involvement. The benefits of religious involvement are suggested to be apparent both at the individual level and the community one, being associated with many positive outcomes including health, mental health, reduced substance use, competence, and educational attainment. There is also a suggestion from longitudinal studies that religious beliefs may be associated with resilience in children, with a putative mechanism being that such beliefs provide stability and meaning to lives, and provide roots and coherence.

Social and cultural norms

As mentioned above, most prevention studies which aim at children and young people in the USA are abstinence oriented. Unusually, Wynn et al (2000) undertook longer-term preventative work which recognised that young people *would* drink, and worked very successfully to reduce future alcohol-related problems. They concentrated on correcting unrealistic beliefs about how normal drinking is – the 'everyone's doing it' fallacy. This programme is part of the Alcohol Misuse Prevention Study (AMPS), a study begun in 1983, with very large samples of schoolchildren followed up for

several years, and with a focus on reducing alcohol *problems* rather than alcohol use, and was reviewed by Ashton (2000), which has informed these present paragraphs.

Wynn et al (2000) followed up over 3,000 young people from grade six (aged 11-12) to grade 10 (age 15-16). The AMPS curriculum begins with a block of lessons at age 11–12, followed over the next two years by booster sessions. Its aim is to reduce the growth of alcohol problems by improving pupils' abilities to identify and resist peer influences (and as such, falls within the type of prevention programme described in a previous section, on 'Direct work with young people'). A separate analysis suggested that the lessons did retard growth in alcohol problems (such as getting drunk or sick or attracting complaints from parents and friends) but *only* among the minority who had already drunk without adult supervision. Since these were also the pupils with the greatest alcohol problems, the curriculum showed promise for preventing future serious alcohol disorders. Similar results were found four years earlier using a less well-developed version of the same curriculum.

Further analyses attempted to identify how the lessons achieved their impact on drinking problems. The earlier study had found that the lessons worked partly by bolstering pupils' endorsement of reasons not to drink and reducing their susceptibility to peer pressure. Wynn et al (2000) tested two further mediating variables: refusal skills and normative beliefs. Refusal skills (which unusually were assessed by direct observation in role play rather than by questionnaire responses) were improved by the programme. However, these were *not* related to overindulgence in alcohol nor did they account for the curriculum's impact on drinking. Unlike refusal skills, from grade seven (age 12–13) upwards, pupils' overestimation of how common drinking was among their peers and among adults *was* related to excessive drinking. Moreover, especially among older pupils (roughly aged 13–14), the programme's correction of these beliefs partly accounted for its impact on excessive drinking. Thus, it appears to be important to equip young people with both refusal skills and also to correct normative beliefs, and it also seems that different interventions are needed at different points in drinking development.

Similar findings have come from other studies, including a large scale US study which found that a seventh-grade curriculum which focused on correcting normative

beliefs reduced alcohol, tobacco, and cannabis use relative to simply giving pupils information about the consequences of drug use (Hansen et al, 1991; Palmer et al, 1998). As Ashton (2000) concludes, the clearest implication from this and related studies is that school programmes which aim to have a preventive impact must incorporate information which corrects inaccurate beliefs about the normality and acceptability of alcohol use, and here he suggests that it would be more logical to focus on correcting incorrect beliefs about the frequency of drinking too much, rather than drinking itself.

School culture and environment

As described earlier in this review, most direct work with children and young people, focused on their information and social skills, is school-based, mainly because of ease of access to the participants. However, interventions have also been mounted which have attempted to alter the overall school culture and environment, and as such have been about impacting on social and cultural norms.

Evidence is starting to emerge that some of the positive effects of some school-based prevention programmes have not been solely about the enhancement of alcohol or substance-specific information or social skills; instead they may have been effective due to the changes they engendered in the school's atmosphere or the nature of the school's teaching (Bonell et al, 2007).

Some studies in the UK (eg Bisset et al, 2007; West et al, 2004) which have focused on these school-level measures have found that schools which are better at engaging or supporting their pupils showed reductions (compared with schools which are not as good at this) in the speed with which these schools' pupils start drinking as well as start other substance use and misuse. Hence Bissett et al (2007) showed that, in schools in the West Midlands, the provision of 'value-added education'[8] was associated with reduced risk of early alcohol initiation, heavy alcohol consumption and illicit drug use, after adjusting for gender, grade, ethnicity, housing tenure, eligibility for free school meal, drinking with parents and neighbourhood deprivation. West et al (2004) showed in an examination of 43 secondary schools in the West of

[8] Defined as those schools who offered enhanced educational support and greater levels of control.

Scotland that school level variation (school effects) was a far stronger predictor of whether young people drank alcohol or smoked (or used illicit drugs) than were individual or other characteristics. Higher levels of smoking, drinking, and drug use were found in schools containing more pupils who were disengaged from education and knew fewer teachers, and in larger schools independently rated as having a poorer school ethos. These findings held true even after controlling for behaviour at age 11, socio-demographic characteristics, religion, family characteristics, disposable income, and parental health behaviours.

Studies in other countries have shown similar results. Kellam et al (2008) implemented the 'Good Behaviour Game' (GBG), a method of classroom behaviour management used by teachers, in 1st and 2nd grade classrooms (children aged 6–8) in 19 Baltimore City Public Schools in the USA. Control conditions were a curriculum-and-instruction programme directed at reading achievement, or the standard school programme in use at that time. The intervention started in the 1985–1986 school year. The GBG intervention was directed at the classroom as a whole, to socialise children to the student role and reduce aggressive, disruptive behaviours, which even in the 1980s were known to be antecedents of later smoking, substance misuse and other disorders. When the children who experienced this classroom behaviour management system were followed up at ages 19–21, it was found that males showed reduced drug and alcohol abuse/dependence disorders, regular smoking, and antisocial personality disorder. This was particularly the case for those who, in first grade, were more aggressive and disruptive, Another study of the GBG, this time in the Netherlands (van Lier et al, 2009) but with (so far) a follow-up of children at a much younger age, again showed an impact on alcohol and tobacco use. Second grade classrooms (children aged 7 years) were randomly assigned to the intervention or a control condition; and alcohol and tobacco use was looked at when these children were aged 10 to 13 years. They found that the intervention children had lower probabilities of tobacco use over the ages 10–13 years; and that (among those children reporting having used alcohol in the last week – not many due to the age range) intervention children reported having a lower probability of alcohol use.

Other studies (eg Patton et al, 2006; Catalano et al, 2004; Flay et al, 2004) have taken different but equally promising approaches to changing school ethos. Patton et al

(2006) in Victoria, Australia, developed the 'Gatehouse' project, designed to promote social inclusion and commitment to education, in reducing among students health risk behaviours and improving emotional well-being. They implemented this in 25 secondary schools with pupils aged 13–14, using a cluster-randomised design. The idea was not to observe effects on the individual children, but to see whether, in schools where the programme was implemented, the behaviour of children aged 13–14 would increasingly diverge between the intervention schools and the control ones. Accordingly they examined the behaviours of interest (substance misuse (any, or heavy, use of alcohol, tobacco or cannabis), antisocial behaviour, and early initiation of sexual intercourse) in 13–14 year olds in the year of first implementation, and then looked again at 13–14 year olds two years later, and then looked again at yet another group of 13–14 year olds two years further on. They found the increasing divergence that they were looking for, and that four years after the programme started, pupils in the intervention school showed 25 per cent less of these health risk behaviours than did pupils in the comparison schools.

Catalano et al (2004) describe the development of school connectedness in two longitudinal studies in the USA: the Seattle Social Development Project and Raising Healthy Children. Both programmes worked with elementary schools (children aged 6–11) and used a developmentally adjusted, multiple-component strategy consisting of classroom instruction and management, parent intervention and child skill development. The focus on parenting and child interventions have a similar orientation to programmes described earlier in this review such as the SFP, but what makes these programmes different is the very extensive work on developing teacher and classroom skills, with the teacher training element including training on proactive classroom management, interactive teaching to motivate learners, cooperative learning, effective reading instruction, teacher coaching, and teachers peer mentoring. Outcome data were collected annually until the children were aged 16, and then when they were aged 18, and every three years subsequently at ages 21, 24, and 27 (although at the time of this paper, data was still being collected for some of the older young people who had entered the programme's schools at a later time). Study results show that the intervention increased school bonding and achievement and reduced problem behaviour throughout elementary school. During middle and high school the level of school bonding declined less for full intervention students than control

students. This difference increased by 12th grade (ie age 13). Compared to the control group, levels of school attachment, commitment, and academic achievement were higher in senior year of high school (aged 16), and school problems, violence, alcohol misuse, and risky sexual activity were all reduced. At age 21, pregnancy rates were lower among females.

These studies provide support for prevention strategies in schools that move beyond health education or skills training for children, to promoting positive social environments. There seem to be some promising results suggesting that schools which engage pupils in their school and their education seem also to protect them against risky forms of substance use, offering a way to prevent substance misuse by focusing on core educational and social virtues. Fletcher et al (2008) in their systematic review of school effects on young people's drug use conclude that schools which develop supportive, engaging and inclusive cultures, and which offer opportunities to participate in school decision-making and extra-curricular activities, create better outcomes across many domains, including non-normative substance use. Bonell et al (2007) in their review suggest that, although the existing evidence is not well developed, current studies indicate the potential of interventions aimed at ethos in overcoming the limitations of existing school-based approaches. They state that the evidence suggests that schools may be able to alter the health behaviours of pupils not only by educational interventions but also by changing the nature of the school as an institution. Fletcher et al (2009) suggest that various pathways may plausibly underlie school effects on substance use and misuse, and that these pathways support the idea of 'whole-school' interventions to reduce substance use through recognising students' varied achievements and promoting a sense of belonging, reducing bullying and aggression, and providing additional social support for students.

Bonell et al (2007) further argue that the UK government already recognises that the whole school environment has a key role in promoting young people's health. They call attention to the National Healthy Schools Programme – compulsory in all schools by 2009 – which requires schools to develop positive and supportive environments and encourage student participation in decisions. However, they also suggest that schools are not being provided with any detailed guidance on how they should improve ethos, and that an evaluation of pilot schemes of attempts to implement the

National Healthy Schools Standard (Blenkinsop et al, 2004; Schagen et al, 2005; Warwick et al, 2005) showed that no schools were introducing systematic approaches to improving environment and ethos such as those described in the US and Australian studies above.

Intervention programmes and sport and other extra-curricular activities

Sport and other extra-curricular activities have also been found to be important: young people involved in extra-curricular activities including sport are less likely to have problems with alcohol (although some contradictory evidence exists that youths participating in sports may be more prone to risky drinking practices). It is also the case that young people who do *not* become involved in such activities are also more likely to initiate alcohol use early. One research group suggested that participation in organised sport activities may delay the initiation of both drinking and intoxication in younger teenagers, and they recommended that sports organisations should be included in drinking prevention programmes (Hellandsjo Bu et al, 2002).

Werch et al undertook two interventions studies based on these ideas. Werch et al (2003a, b) developed a novel sport-based intervention aimed at preventing alcohol use within the context of a sport programme and promoting physical activity among adolescents, and found that significant improvements occurred between baseline and follow-up for various measures of alcohol, exercise, and risk/protective factors. The authors concluded that a brief sport-based screen and consultation tailored to adolescents' health habits, with and without parent materials, may potentially reduce alcohol use while increasing exercise frequency. Werch et al (2005) tested this a second time, this time utilising a randomised control trial design, demonstrating significant positive effects at 3-months post-intervention for alcohol consumption, alcohol initiation behaviours, alcohol use risk and protective factors, drug use behaviours, and exercise habits, and at 12-months for alcohol use risk and protective factors, cigarette use, and cigarette initiation. Again the authors concluded that a brief, one-to-one consultation integrating alcohol avoidance messages within those promoting fitness and other positive health behaviours holds promise for influencing adolescent alcohol and cigarette use and other health behaviours at post-treatment and one year later.

Sport is not the only extra-curricular activity which has been found to interact with alcohol use in young people. Membership of youth groups is another. Bellis et al (2007), in their study of the predictors of risky alcohol consumption in schoolchildren, showed that membership of youth groups/teams was in general protective against risky drinking (bingeing, high frequency drinking, drinking outdoors) despite some contradictory association with bingeing (as with the findings in relation to sports presented above).

Further evidence of the importance of extra-curricular activity comes from a study by Oman et al (2004), which looked at a number of protective factors, which they described as 'youth assets'. They looked at the potential protective effect of these assets on adolescent alcohol and drug use, in a sample of 1,350 adolescents and parents from a low-income, inner-city population. They examining 9 youth assets, and found significant positive relationships between several and non-use of alcohol and drugs, including the use of time (religion), good health practices (exercise/nutrition), aspirations for the future, peer role models, responsible choices and family communication. For example, youths who had the peer role model asset were nearly 2.5 times more likely to report non-use of alcohol compared with youths who lacked the asset, and those with the positive family communication asset were almost 2.0 times more likely. Youths who possessed all of the statistically significant youth assets were 4.44 times more likely to report non-use of alcohol and 5.41 times more likely to report non-use of drugs compared with youths who possessed fewer youth assets.

In many ways these youth assets and the influences of religion, sport, strong family bonds, etc, can all be seen as protective factors, which increase a young person's resilience; and enable them to withstand some or all of any risk factors that they might also have. Risk, Protective and Resilience characteristics are all shown in Table 1, at the end of this Review.

Scales and Leffert (1999) undertook another study which looked at 'assets'. They developed a scale of resilience factors (which they called 'Developmental Assets'), and looked in one population at how many young people had these factors. These resilience factors, and the percentage of children in that population having them, are

shown in Table 2, at the end of this Review. As Table 3 shows, there is a clear relationship between the number of these resilience factors and a reduced chance of a child starting to act in a risky fashion.

Multi-component

Not surprisingly, if there is evidence that a number of disparate approaches (parents, peer interaction and refusal skills, clarification of norms, etc) do lead to positive effects on drinking initiation and drinking levels once started (albeit with differing levels of effectiveness), then doing them in an integrated way should led to even better results. Does it?

Many of these programmes have already been discussed and where appropriate this section will refer back to the relevant section/subsection. Integrated or multi-component approaches to preventing and reducing alcohol-related harm have been reviewed by Thom and Bayley (2007), and have been examined in a number of reviews of preventative interventions with young people (Jones et al, 2006b; Skara and Sussman, 2003; Sumnall et al, 2006). All have concluded that there is evidence that multi-component programmes do work well, with Jones et al (2006b), in their review of universal drug prevention, concluding that multi-component programmes and those based on the social influence model have shown the most consistently positive (albeit still limited) outcomes.

Stead et al (2006) in their review of the effectiveness of social marketing alcohol, tobacco and substance misuse interventions, suggested that a number of multi-component approaches had shown at least some success. Of those interventions for which there existed medium (1–2 year) or longer-term follow-ups, Stead et al identified three which were successful which were multi-component: Project SixTeen (Biglan et al, 2000), Project SMART (Hansen et al, 1988), and Project Northland (Perry et al, 1996). Project SixTeen (Biglan et al, 2000) was designed primarily to reduce illegal sales of tobacco and youth tobacco use, but it also appeared to have affected alcohol use; five years after the start of a 3-year intervention, alcohol use in the last week had increased significantly in communities which had received only a school-based programme but not in the intervention communities. Project SMART

(Hansen et al, 1988) was a school-based social influences programme which found lower alcohol use onset among students who received the intervention compared with control group students at 1 and 2 year follow-ups. Project Northland (Komro et al, 2001; Perry et al, 1996, 2002; Stigler et al, 2006) was a 3-year, community-wide, multi-level intervention (involving the school curriculum, peer leadership initiatives, parental involvement, and community mobilisation, involving teacher training, joint child–parent assignments and a variety of child–parent activities, election and training of peer leaders, production of parent notes, newsletters about the project, training field staff in community change strategies, recruitment and training of community 'task force' members, and a general media campaign). They found a significant impact on past month and past week alcohol use ($p<0.05$ for each) in the intervention group compared with the control group at 2.5 years, although the effect had dissipated at 4 years. Project Northland also found a significant reduction in 'proneness to alcohol, drug and family problems' after 3 years of the programme, suggesting that the family-focused 6th grade component of the programme was effective in influencing wider precursors of problem behaviour.

Skara and Sussman (2003), in their review where they examined 25 long-term adolescent tobacco and other drug use prevention programme evaluations, reported that five of these prevention projects complemented prevention efforts in the schools with a community component that involved intervention programming through such channels as parents, mass media, or health policy change, although, as the main focus of their review was on smoking, only two of these multi-component interventions provided long-term assessments of alcohol incidence and prevalence (Pentz et al, 1989, 1990, unpublished; Perry et al, 1992).

Among the most important of the multi-component projects (although not reviewed by Stead et al, 2006) is the Adolescent Transitions Program (ATP), a parent training programme developed by Dishion and Kavanagh (2003) as a selected intervention for at-risk early adolescents. ATP is a multilevel approach to family-based interventions within a middle-school setting, and it is multi-component because it uses family, school and peer components. Dishion and Kavanagh (2000, 2003) say that the intervention strategy is based on an 'ecological framework' for studying social and emotional development in children and adolescents, emphasising a network of

contextual factors within which parenting is both directly and indirectly influential on the development of problem behaviours. The ATP model includes a universal, selected, and indicated strategy for serving families with young adolescents. The model is designed to address the needs of families of young adolescents that present with a range of problem behaviour and diverse developmental histories, and the intervention can be delivered at each of three different levels. This approach and the associated data (Dishion and Kavanagh, 2000, 2003; Dishion et al, 2002, 2003, 2004) are consistent with the broad literature reviewed above supporting the effectiveness of family interventions, especially for high-risk youth. What makes this approach especially interesting is the effective implementation of family interventions within a school context, which suggests that these interventions can make a significant contribution to reducing problem behaviour and substance use from a public health perspective.

Dishion et al also recognise the importance of school-level interventions as discussed above, as an intervention which can be integrated with work which uses the school to effect individual behaviour change via the improved skills of young people, and work which focuses on improving parenting practices. As they state (Dishion and Kavanagh, 2000, p 909)

> "*the field has moved collectively toward a set of principles that are critical to preventing and reducing problem behavior in early adolescence: (a) parenting practices are particularly important to target, especially among high-risk youth; (b) creating "artificial" peer group environments may actually lead to iatrogenic effects, as indicated by our own outcome data, as well as that of others; and (c) schools may remain as a medium for rebuilding communities, in general, and specifically, for re-engaging families in the primary task of socialization and promoting the health of young people*."

Dishion et al's parent-focused curriculum is based on family management skills of encouragement, limit setting and supervision, problem solving, and improved family relationship and communication patterns. Teaching these skills follows a step-wise approach toward effective parenting skills and strategies for maintaining change. The long-term goals of the programme are to arrest the development of antisocial behaviours and drug experimentation in young people, with intermediate goals being

to improve parent and family management and communication skills. The curriculum has been targeted at a broad cross section of parents, but group leaders are trained to adapt the curriculum to be sensitive to the education level and cultural orientation of families.

The ATP includes twelve parent group meetings and four individual family meetings. There are also monthly booster sessions for at least three months following completion of the group. Parents meet for 90 minutes once a week. Groups are designed to provide a balance between skill development and group discussion. Each meeting includes discussion and practice of a family management and a communication skill. Parents participate in group exercises (either oral or written depending on group needs), discussions, role-plays and setting up 'home practice' activities. There are six accompanying video tapes that demonstrate family management and communication skills using a 'wrong way–right way' format. The group is led by one or two leaders depending on the size and needs of the group. Additionally, a parent consultant (a parent who has been through the programme) helps facilitate discussion and practice and provides a bridge between leaders and participants. Group work is supported by weekly mid week phone contact by the group leader and four individual family meetings. Parents are invited to meet with the group leader at the beginning of group to establish family goals for the programme. There are three additional individual meetings available for families after the encouragement, limit setting and problem-solving components of the programme. These sessions are designed to help families tailor-make skills to their individual needs and problem-solve strategies for barriers that interfere with effective parenting. Data (Dishion and Kavanagh, 2000, 2003; Dishion et al 2002, 2003, 2004) from randomised controlled studies show that the programme has been effective in reducing observed negative parent–child interactions, that teacher reports show decreases in antisocial behaviours at school, that the programme has been effective in reducing youth smoking behaviours at one year follow up, and that there is high parent satisfaction with ATP.

Another multi-component parenting intervention utilising family, school and community, is that developed by Sanders (2000) in Australia, the Triple P-Positive Parenting Program, which again is starting to produce significant positive findings.

Sanders (2000) presents the model for the development of this "*comprehensive, multilevel, preventively-oriented parenting and family support strategy to reduce family risk factors associated with drug abuse in young people*" (p 929). Sanders argues that, if parenting interventions are to make a significant impact at a population level on the prevalence of dysfunctional parenting practices, there is a need for an 'ecological approach' to parenting support. He suggests that such an approach needs to target a variety of social contexts, at population level, that are in a position to provide parents with access to evidence-based parenting interventions, and the Triple P-Positive Parenting Program is discussed as an example of such an approach. The core constructs underpinning the Triple P system include the promotion of parental self-regulation (self-sufficiency, self-efficacy, self-management, personal agency, and problem solving), through making parenting programmes of adequate intensity widely available in the community through flexible delivery modalities (individual, group, telephone assisted and self-directed). It also involves a media strategy, to counteract the 'pervasive influence' that the media has on parents' and children's lives. The system comprises a tiered continuum of increasingly intensive parenting interventions ranging from media interventions with wide reach, to intensive behavioural family interventions with narrow reach for high-risk families where parenting problems are complicated by other factors including marital conflict, parental mood disturbance, and lack of social support. Sanders (2000) discusses the scientific basis of the system of intervention, and various papers demonstrate evidence for this approach's efficacy (Connell et al, 1997; Markie-Dadds and Sanders, 2006; Martin and Sanders, 2003; McTaggert and Sanders, 2003; Sanders and McFarland, 2000; Sanders et al, 2000; Turner and Sanders, 2006) in the school, primary care, workplace and other settings.

Although there are reports of the success of multi-component programmes, there are also problems with these interventions. Jones et al (2006b) draws attention to the fact that research is lacking about which components contribute to the overall effectiveness of multi-component programmes, an argument also made by Stead et al (2006).

In fact, Project Northland has been not only the best followed-up project (Stigler et al, 2006), it also has undertaken analyses which do attempt to clarify the differential effectiveness of different components. Stigler et al (2006) attempted, post hoc, to

tease apart the effects of different intervention strategies used in Project Northland. The initial intervention occurred when students were in 6th–8th grade (11–12 to 13–14), and intervention during that phase included five components: classroom curricula, peer leadership, youth-driven/led extra-curricular activities, parent involvement programmes, and community activism. Student exposure to/participation in these components was followed over time, and those measures were used as time-varying covariates in growth curve analyses to estimate the effects of the intervention components over time. Stigler et al (2006) show that the impact of the components appears to have been differential. Overall, the parent involvement programme had the most consistent and positive effect. As well as this, the strongest effects were documented for the planners[9] (youth-driven/led extra-curricular activities) of extra-curricular activities; and parent programme components. The classroom curricula proved moderately effective, but no effects were associated with differential levels of community activism. Interestingly given that this is one of the rationales for undertaking multi-component interventions, Stigler et al (2006) show that the interactions they tested did *not* provide support for synergistic effects between selected intervention components.

There are other problems which reviewers call attention to as well. Stead et al (2006) state that, in large-scale multi-component and community interventions and mass media programmes, it is impossible to control fully for other factors which might influence outcomes, even where matched comparison cities or communities are used. It is also difficult, where effects *are* found, to identify whether these are attributable to particular intervention components, or to the combination of activities (notwithstanding Project Northland's unusual work in these two directions), or to other factors such as secular trends. Furthermore, intervention approaches such as community organisation, direct action and media advocacy do not lend themselves readily to precise statement as independent variables whose effects can be measured.

[9] Planners were students who "self-selected to plan one or more activities in 7th and/or 8th grade. … Planners were considered separately from those who participated, given a previous study that showed differential intervention effects for these two groups" (p272).

Researching complex interventions: issues and challenges

When assessing the effectiveness of any preventative intervention programmes, it is important to examine the quality of implementation. It is of course vital for such interventions to be based on both:

- research evidence as to the factors which might lead to alcohol initiation and problematic use, and
- psychological or educational theory about what messages need to be delivered as a result of that research and how best to deliver them.

This however is not enough: it is also important that the intervention is delivered to a high quality, with appropriate fidelity, in real life settings.

Hence for example, when assessing the effectiveness of school-based skills-enhancement programmes, it is important for researchers to examine the quality of implementation (Stead et al, 2009). In several studies examined in the various reviews above, substance use prevention curricula were not implemented as intended, or were poorly implemented, meaning that any failure to detect effects may reflect weaknesses in delivery rather than in programme theory and design. As Stead et al conclude (p 1):

> *"Nearly all schools provided drug education but modes of delivery and learning approaches did not always reflect the evidence base. There was a strong reliance on information provision and more limited use of social influences, resistance and normative approaches. Teaching was reasonably interactive, particularly with teachers who had been trained. Although drug education was provided across all school years, there was limited linkage and some duplication of content for different age groups. The rationale for resource use was not always clear, and some resources were inappropriate for pupils."*

There were also many methodological limitations within almost all of the studies examined in the previous sections of this present review, which most of the other reviews cited above discuss in some detail. Most reviews of these and related areas concentrate on these methodological limitations, often concluding that because of them, no substantive conclusions can be drawn. This present review takes a different view. Given the immense problems in undertaking the sort of double-blind

randomised controlled trials which so many reviews appear to consider are the 'gold standard', this reviewer considers that the weight of evidence supports the notion that interventions, based on some of the range of factors highlighted in the earlier parts of this review, can be and often are effective.

One frequent criticism made about the sort of interventions studies discussed in this present review does deserve some further discussion. Most reviews of these areas outlined above have sought long-term effects. These reviews have often deemed an intervention of less (or even no) utility if it cannot demonstrate long-term effects, even if it has demonstrated short- and medium-term ones. The present reviewer considers this to be a fallacious argument, for three reasons.

- First, if the aim of the intervention is to put off drinking initiation, then an intervention which does succeeds in doing this for a significant number of young people for 1–2 years should be seen as successful, irrespective of whether it continues to have this effect for future years.
- Second, there is an issue of how strong one might reasonably expect any intervention to be, relative to all of the influences that any person is exposed to over their lives. This is an issue for treatment research too, where it is sensible to expect treatment to have both an immediate and medium-term effect, but not to be held responsible for long-term outcomes. For example, effective alcohol treatment should mean that a problem drinker is, post-treatment, no longer a problem drinker, and that this positive effect should last for some time; but to suggest that a treatment is ineffective if, ten years later, the person has relapsed, is not sensible and is asking too much of the treatment. Treatment will affect the person as they are at the time of treatment: it cannot treat the person that they will change into and become over the forthcoming years. Treatment might provide for the person receiving it new ways of thinking about alcohol, but in the absence of long-term contact with the treater, these new ways of thinking will become just one influence on these people, which may well be overlain by other influences in later years. The same argument applies to what might be expected of preventative interventions.
- Third, it is important not to place too much weight on interventions relative to ongoing factors within society. The pressures on young people to *not* initiate

drinking or to *not* over-indulge once they do are not equally balanced with the pressures to *start* drinking and to drink a *lot*. These latter pressures are constant for young people, and the huge tide of advertising and media messages constantly fuel that pressure. To expect a few hours of preventative intervention, even if there are occasional 'booster session', to enable children to withstand these pressures is unrealistic. Put another way, if children were exposed to pro-drinking messages for only one year at age 12–13, and then were exposed to preventative interventions every year and constantly over the years between 0 and 18, no-one would be surprised if the single year of pro-drinking pressure either did not bear fruit or did so only for a limited period.

Finally, all the reviews examined, and this present review at well, reach the conclusion that there is a major lack of robust UK-based evaluations of prevention interventions and programmes, whether oriented towards alcohol initiation, general substance initiation, or later patterns of drinking. It is clear that more research is required (and hence to be funded) in the UK to undertake medium-term, longitudinal studies into a range of family, school-based, community-based programmes (including mass media campaigns as a part of multi-component prevention programmes) to allow some understanding of what works in a range of UK settings.

Interventions: Summary

Overall the present review and the reviews outlined above have found reasonable evidence that substance use interventions can be effective. A majority of the interventions included in this review which sought to prevent youth alcohol, tobacco or illicit drug use reported significant positive effects in the short term. (There are also a great number of interventions and preventative programmes which have no positive findings, even in the short term; many of these have only been mentioned in passing, so that this review could concentrate on those with some evidence for their effectiveness.) Even in these interventions which reported positive short-term effects, these effects tended to dissipate in the medium and longer term. Nevertheless, around half of the alcohol and tobacco interventions still displayed some positive effects two or more years after the intervention.

This section of the review sought to look at evidence from these preventative intervention studies to inform the earlier parts of the review: if interventions based on the knowledge acquired about how children develop knowledge, attitudes, expectations, and intentions, and how these go on to inform their drinking initiation and subsequent behaviour, do postpone drinking initiation and do reduce problematic subsequent behaviour, this is further evidence that this knowledge is correct. If, however, such interventions do not lead to problem reduction, then further work is needed to clarify whether the acquired knowledge is correct.

The above sub-sections have demonstrated that interventions based on family, parenting, and parent–child interactions are the most effective, when delivered in either stand-alone formats or as part of integrated multi-component ones within the school or other settings. This corroborates the huge amount of research underlining the importance of the family in the initiation and subsequent behaviour towards alcohol and other substances, and reinforces the fact that the family has significant long-term impacts on future substance-using behaviour.

There is some, although less strong, evidence suggesting that interventions based around altering peer influence can work, either by improving young people's skill to resist peer pressure, or by improving their skills in dealing with general life issues, or by recruiting and engaging with peers to train them to become educators and attitude-formation leaders. The interventions that appear to work best are those that are interlinked with ones that also involve the family. In comparison with family-based interventions, skills enhancement and peer-based interventions appear to be less effective: they have far less of a longer-term impact. These findings also corroborate the findings from the earlier sections of the review, which showed that peer influences were more short-term than family ones, and that the family also exerted a significant influence on who young people select and maintain as friends in the first place.

There have been very few preventative interventions based on the ideas of the dominance of media and cultural representations of alcohol, meaning that it is not possible to come to any even tentative conclusions about this area from such intervention studies. However, the wealth of evidence outlined in the section on advertising and the media suggest that these are indeed dominating influences on

young people's knowledge, attitudes and then behaviour towards alcohol. The importance of this area suggests that more attention needs to be paid to developing and testing such interventions.

Evidence is starting to emerge of the positive effects of interventions aimed at altering the school ethos or atmosphere or the natures of the school's teaching. There is some evidence that influencing young people's views about normative drinking behaviour can have significant preventative effects, as can interventions aimed at sport and other extra-curricular activities, especially in enabling young people to develop resilience.

There is also some evidence that multi-component interventions also work (as, theoretically, they should in that they target both family and peers, as well as community forces). As Jones et al (2007a), in their review of effectiveness of schools-based interventions to prevent and/or reduce alcohol use by young people, state:

> "*programmes that combined classroom-based intervention with components targeting parental participation, and focusing on wider problem behaviours, appeared to have more consistent effects on alcohol use" (p 174). "There is evidence to suggest that programmes that begin early in childhood, combine school-based curriculum intervention with parent education, which target a range of problem behaviours including alcohol use, can have long-term effects on heavy and patterned drinking behaviours*" (p 151).

It is also the case that the more community oriented interventions within this category may also have had an influence on various components of the community and wider society: the behaviour of retailers, on local policy, etc, although of course it is difficult to attribute changes to the interventions rather than to other events and trends in the community.

There is a lack of robust UK-based evaluations of prevention interventions and programmes, whether oriented towards alcohol initiation, general substance initiation, or later patterns of drinking.

Conclusions

Risk factors

One problem when examining how children learn about, and acquire attitudes, expectations and intentions towards alcohol, which then serve to increase or decrease these children's risk of early initiation or problematic use, is that there is such a wide range of factors which has been identified. These have been reviewed above (and see also Windle, 1998) and they include:

At the *societal-community level*: youthful drinking behaviour is influenced via media sources (eg television and magazine commercials, movies) and adolescent societal heroes (eg athletes, rock stars) that explicitly or implicitly convey the message that alcohol consumption is associated with positively valued characteristics such as popularity with friends or with the opposite sex. Such societal media images are further fostered by the absence of serious enforcement of established legal standards for underage drinking. Although major legal penalties for adolescents are often associated with the use, and especially the selling, of substances identified as illegal for adult use (such as marijuana, cocaine, etc), alcohol (a legal substance for adults but illegal for adolescents) use by teenagers is not likely to meet with legal enforcement unless there are extenuating circumstances such as a crime being committed. The absence of legal enforcement of underage drinking is likely to contribute to an atmosphere of implicit tolerance of alcohol use by adolescents. An additional community level factor associated with risk for adolescent drinking is the relative ease of availability of alcoholic beverages. Easy access may occur within the home, or via retail outlets where young people may either be directly served, or easily request others to purchase their drinks for them.

School functioning has also been associated with increased risk for adolescent drinking. Early onset, persistent behaviour problems, and low commitment to school achievement and career expectations, are major predictors of high levels of teenage alcohol use. Children and adolescents who do not believe that they will be successful in their education and careers tend to associate more with other young people with similar lack of aspirations and belief in themselves, and both the beliefs, and the

association with similar others, are associated with earlier and higher levels of consumption. Those beliefs and the friendships with similar others are also associated with truancy, poor exam results, and general academic underachievement, and these factors are independently associated with increased risk for heavier alcohol use.

Family factors associated with increased risk for adolescent alcohol use and misuse include the parenting style adopted (an inadequate balance between the two dimensions of 'care' and 'control'), poor family management practices (eg failure to supervise or monitor children as to where they are and who they are with, the lack of clear alcohol-specific rules and consequences, the lack of clear and open communication of both expectations about alcohol use (or non-use) and potential disapproval if expectations are not met, failure to control of early drinking experiences), the lack of a warm, open, nurturing relationship with parents, spending little time together as a family, the lack of effective parental modelling of alcohol use behaviours (especially if one or both parents has a drinking problem), the lack of parental self-efficacy, as well as marital conflict, harsh (physically abusive) discipline, and physical or sexual abuse or other family violence. When a constellation of these factors are present, young people often seek some level of friendship, comfort and support from other adolescents who are also from families who exhibit a similar range of parenting and family practices. This process of selective association among young people from similar families often results in a progression toward higher levels of alcohol use and other problem behaviours by these young people.

Peer factors are also highly important. Peer selection processes are not random, but rather reflect a tendency for adolescents to select friends and peers according to similarities regarding attitudes, values, and behaviours, although these can be heavily influenced by parental and family factors. The friend and peer context is especially important during adolescence to foster a personal identity or sense of self, as a person apart from the family, and to learn social behaviours that are important in young adulthood.

Several *individual factors* have also been identified as increasing risk for adolescent drinking behaviour, although they have not been examined in this present review. The

research into the children of problem drinkers has consistently supported some measure of genetic susceptibility to alcohol among the offspring of problem drinkers, and these children are more likely to experience a disrupted family environment and to have more emotional problems (eg depression, anxiety) and school and conduct problems (eg aggression, truancy), and to perform more poorly in school. Some personality factors have also been associated with earlier and higher levels of alcohol use, as have poor problem-solving coping skills, which might contribute to the adoption of escapist drinking coping motives.

These risk factors for adolescent drinking behaviour do not occur in a vacuum, but are often highly interrelated. That is, often adolescents may be at risk not simply because of one factor, but due to the co-occurrence of several of these factors. The initiation into drinking and subsequent drinking behaviour may also maintain or increase the level of risk associated with these factors (eg increased academic failure) and contribute to a negative spiralling process toward more serious alcohol problems and alcoholism.

The other side of 'risk factors' is 'protective factors' which are often the converse of the risk ones, although there are also ones which are separate. These, and the resilience factors that they lead to, have been summarised in Table 1.

Messages

Children are going to learn about alcohol. The important question for society (and for parents) is 'what messages do we (society, parents) want them to learn?' To a very large extent, this *is* a societal decision, as well as a family one, given the massive effects that non-family influences have, through direct and indirect media representations.

There is a move within current society to change towards a more 'continental style' of drinking, which would imply teaching young people to drink moderately, at home, with the family, as opposed to getting extremely drunk as a 'rite of passage' to adulthood, and then continuing to expect to drink heavily, as a definition of what makes for a 'good night out'.

The problem, however, with 'teaching young people to drink moderately, at home, with the family', is that many parents do not drink moderately: instead what is taught (usually by observation of parents' behaviour) is heavy home drinking: there has been a significant rise in the numbers and proportions of adults who drink over recommended limits, with much of that drinking occurring in the home. What is taught, then, by observation, to children and young people in many families, because they see adults drinking so heavily, is that drinking to excess in the home is very allowable, which leads to (or certainly normalises) these young people replicating this behaviour in other contexts (binge drinking away from home). Hence Seljamo et al (2006) found that fathers' current heavy drinking was the best predictor of 15-year-olds' heavy drinking.

Hence, whatever we teach about drinking, it has to be coherent and consistent, and currently it is not. At present, young people receive a huge range of mixed messages, from home, school, and society in general, which leads many of them to be very confused. In the United States too, mixed messages are also conveyed to children and adolescents about alcohol use, often via various media sources (for example, drinking alcohol is often glamorised by rock stars and is associated with major sporting events in the USA such as the Super Bowl). In the USA, many television advertisements convey the message that drinking alcohol is a component of being popular among friends and is central to attracting that 'special someone' in your life. It has been estimated that children in the United States will see alcohol consumed an average of 75,000 times (via television, movies, personal observation) prior to reaching the legal drinking age. In addition, many parents allow their underage children to drink alcoholic beverages. Therefore, even though alcohol use among children and adolescents is illegal by societal standards, in practice such messages are poorly conveyed and enforced, and experimentation with alcohol use among adolescents is not surprising.

In fact, the only very clear and unambiguous message that young people get is the expectation that young people *will* drink, and that (from the media) most will drink excessively/binge. Given this, it is not too surprising that many of them do so! This probably contributes to the shift that has occurred in young people's expectations of what they think that their own behaviour should be, and their understanding of what

the norms for young people's drinking behaviour actually are. There appears, for many young people, to be a general expectation, a new cultural norm, even a cultural definition of what constitutes leisure, such that 'having a good time' has become synonymous with excessive drinking, and even drinking to oblivion.

What needs to be done: More than teaching about alcohol

The sub-sections above have clarified risk factors, outlined some of the mixed messages about alcohol that young people receive, and suggested that two specific problems are the changed norms of drinking behaviour that both adults and young people hold about what is 'normal' drinking.

What needs to be done?

Young people at particular risk

Recent guidance has made a good start suggesting what should be done for especially vulnerable and disadvantaged children and young people. The NICE Guidance on *Community-based interventions to reduce substance misuse among vulnerable and disadvantaged children and young people*[10] (NICE, 2007) recommends that all vulnerable and disadvantaged children and young people aged 11–16 years and assessed to be at high risk of substance misuse, and all parents or carers of these children and young people, should be offered a family-based programme of structured support over two or more years, drawn up with the parents or carers of the child or young person and led by staff competent in this area. They recommend that the programme should include at least three brief motivational interviews each year aimed at the parents/carers, and that programmes should assess family interaction, offer parental skills training, encourage parents to monitor their children's behaviour and academic performance, include feedback, continue even if the child or young person moves schools, and offer more intensive support (for example, family therapy) to families who need it.

[10] They define vulnerable and disadvantaged children and young people as including those whose family members misuse substances, those with behavioural, mental health or social problems, those excluded from school and truants, young offenders, looked after children, those who are homeless, those involved in commercial sex work, and those from some black and minority ethnic groups. In 2003, 24% of vulnerable young people reported using illicit drugs frequently during the preceding 12 months, compared with 5% of their less vulnerable peers (Becker and Roe, 2005). There were significantly higher levels of drug use among those who belonged to more than one vulnerable group.

They further recommend that, for children aged 10–12 who are persistently aggressive or disruptive and assessed to be at high risk of substance misuse, the children should be offered group-based behavioural therapy over one to two years, before and during the transition to secondary school. They say that sessions should take place once or twice a month and last about an hour, and that each session should focus on coping mechanisms such as distraction and relaxation techniques, and should help to develop the child's organisational, study and problem-solving skills, and involve goal setting; and that their parents or carers should be offered group-based training in parental skills. They recommend that this should take place on a monthly basis, over the same time period, and should focus on stress management, communication skills and how to help develop the child's social-cognitive and problem-solving skills, and should advise on how to set targets for behaviour and establish age-related rules and expectations for their children.

What about children and young people who are NOT especially vulnerable and disadvantaged

The NICE guidance is helpful, but it is part of a paradigm that suggests that substance misuse problems occur to problem people (in this case, especially vulnerable and disadvantaged children) as opposed to an alternative paradigm which suggests that substance misuse, and especially the heavy and binge drinking of young people, is more a societal than an individual problem. In fact, the position taken by this present reviewer is that both paradigms are useful: there are often particular factors (examined in this review: parent, sibling, peer, and individual) that make young people more vulnerable to early initiation and subsequent heavy or binge use of alcohol; but there are also societal factors which apply across the board; action needs to be taken to deal with both the particular and the societal if the current trend for early initiation and subsequent heavy use of alcohol is to be reversed.

Hence, as well as ensuring that society's messages about alcohol and young people are coherent and consistent, and ensuring that especially vulnerable young people receive specific and particular help, there are a range of other things that need to be done if we want to prevent early and /or excessive alcohol consumption in children and young people. These include:

- Delay the onset of drinking. There needs to be a concerted move to alter people's norms, so that they do not introduce alcohol to children at too young an age. This will involve an information campaign, informing people that, contrary to popular opinion, continental drinking styles do NOT involve giving children sips of alcohol at (for example) age eight, and that on the continent, young people tend to start drinking at a much later age and to drink considerably LESS than in the UK (eg Royo-Bordonada et al, 1997, in a national survey in Spain of persons aged 18 and over found the average age of first use to be 16.7 years; and Ledoux et al (2002) showed, using ESPAD data, that far fewer boys and girls in France used alcohol at the age of 15–16 than do boys and girls in the UK of the same age (the figures for boys then girls, in France then UK, are 'drink alcohol six or more times in the past 30 days' (21 per cent, 12 per cent, 34 per cent, 30 per cent), 'drink alcohol 20 or more times in the past year' (17 per cent, 7 per cent, 41 per cent, 31 per cent), 'binge drink three or more times in the past 30 days' (16 per cent, 7 per cent, 33 per cent, 30 per cent), 'get drunk three or more times in the past year' (18 per cent, 10 per cent, 52 per cent, 50 per cent).))

The analysis above suggested that children were confused by the mixed messages which they receive, but it is the case that parents are confused as well. Because they *think* that they know that it is helpful to introduce children to alcohol sensibly and within the parental home as opposed to making it a major 'adult' 'rite of passage', and because they *think* that they know that 'on the Continent' parents start their children off young with sips of watered-down wine, they have become confused as to what an appropriate age might be to make this sensible introduction. They need to be helped to realise that, if they consider that it is appropriate for their children to start drinking alcohol at (say) 16 (which it must be recalled is still five years before the legal drinking age across the USA) then maybe they might start to introduce their children to sips of wine etc in the family home, with a meal, at the age of 14 or even 15, not at the age of (say) eight.

Of course, in many cases, children will have had alcohol before this (eg for religious reasons, or sips of alcohol at family celebrations such weddings or Christmas), but children are very adept at separating out behaviour in different contexts, so drinking alcohol as part of religion or special occasions will easily be seen as very different from any form of regular drinking.

It is also the case, as Harnett et al (2000) pointed out, that drinking styles at any age are transitional, and that most young people pass through from one style to the next as a form of social development. Nevertheless, although there is utility in conceptualising young people's drinking in these ways (their eight drinking styles are: childhood, adolescent, experimental, sociable, recreational, safe, therapeutic, structured), there still needs to be a re-alignment of social norms about drinking such that both young people and adults expect drinking to start at an older age and expect drinking to excess to be a rare event not a 'normal' one.

- Parents then need to be helped to realise that it is a good thing to delay the onset of drinking, and that there are things (such as not introducing alcohol too early) that they can do. This links with the teaching of norms, and with altering those norms, so that people (parents, journalists) realise that it is not helpful to start their children off with sips of alcohol at too young an age.

This also links with the recent suggestion by Srabani Sen, at that time the Chief Executive of Alcohol Concern, that the legal drinking age in the UK should be raised from 5 (its present level) to (say) 15. Her point, lost in the furore following that suggestion, was that parents need clear guidance over what is an appropriate age to start their children drinking, and that children also need clear guidance over this; and the best way of informing everybody about what they are expected to do (the best way of altering the drinking norms away from the current pressure to drink at too young an age, and towards delaying onset of drinking until much later) is to enshrine this in law – not so that parents of children can be prosecuted if they do not obey, but to send as clear a message as possible to the whole country. (Clearly any such law would also need to allow for alcohol's use in religious rituals as a separate case.)

- Work needs to be done to change children's and young people's norms about drinking. Some of the discussion above has used the term 'binge' drinking, but in fact most young people do not see themselves as 'bingeing' or 'drinking riskily' or in fact doing anything abnormal (Coleman and Cater, 2007; Griffin et al, 2007; Hackley et al, 2008; Szmigin et al, 2008).

Coleman and Cater (2007) looked, using individual in-depth interviews and a number of focus groups, both at how young people construed their own drinking, and at what they thought could usefully be done to change the culture of young people's binge drinking. They found that, on the whole, most young people did not classify themselves as binge drinkers, with drinking considered to be part of a normal and fun existence.

In terms of what they thought would work to stop binge drinking, responses included: shock-tactics that young people could relate to (ie experiences of peers rather than 'diseased livers'), witnessing and reflecting on anti-social and embarrassing behaviour, acknowledging the likelihood of regretted sexual experiences, and greater enforcement of not purchasing alcohol when drunk. Coleman and Cater suggest that ways to change these cultural norms of binge drinking (which is not even recognised as such by the young people doing it) might include changing the definition of a binge away from a number of units, towards something more understandable such as being based on being drunk; and developing interventions to change norms that are youth-, culturally- and ethnically-specific. The key issue, they suggest, is that the messages in any intervention must be ones that young people can identify with.

They also suggest that the young people they interviewed consistently mentioned the acceptance of being drunk in public settings. This implies that the tightening of laws over ejecting people from bars, clubs and pubs due to drunkenness need to be revisited. The issue here is not that the legislation needs to be in place, rather than this legislation requires greater support and enforcement.

Szmigin et al (2008) looked at marketing communications which present drinking as a crucial element in 'having fun', and as an important aspect of young people's social lives. Their empirical study involved analysis of focus group discussions and individual interviews with young people aged 18 to 25 in three areas of Britain: a major city in the West Midlands, a seaside town in the South-West of England and a small market town also in the South-West. They argue that the term 'calculated hedonism' better describes the behaviour of the young people in their study and in

particular the way they manage their pleasure around alcohol, than the emotive term 'binge drinking'.

Hackley et al (2008) argue that the current focus on ‘binge drinking’ risks isolating young people as both cause and effect of the alcohol problem which thereby places an unrealistic burden of responsibility on local communities and agencies. These writers conclude that alcohol policy requires a more substantive, clearly specified and evidence-based approach which acknowledges the complexities of the situation and allocates responsibilities in a more focused way, in particular addressing the significant role of drinks manufacturers, the retail trade and the marketing and advertising industry.

Nevertheless, children’s and young people’s norms about what constitutes ‘normal drinking’ need to be altered. A recent nationwide (UK) survey carried out with 1,491 9–11 year olds asked the children about their perceptions of adult drinking (http://www.lifeeducation.org.uk/newsletter/newsindex.php?action=publicarticle&id=372). Almost a third of the children (30 per cent) thought that for adults who drink wine, drinking five or more glasses of wine in one night is normal drinking behaviour. Over a quarter of the children (27 per cent) also think that people who drink beer would normally drink four pints or six bottles in an evening. If one third of children believe that normal drinking constitutes drinking at levels that are categorised as binge levels, it should not be surprising that so many young people also do the same when they start drinking in more ‘adult’ ways.

- At the time children start drinking, parents should provide the alcohol for them. Although parents should not provide alcohol to their children when they are too young, in that it serves to encourage earlier onset of drinking, it is helpful if they do so when children are actually starting to use alcohol. Bellis et al (2007) found that being bought alcohol by parents was associated with both lower bingeing and drinking in public places. They concluded that parental provision of alcohol to children in a family environment may be important in establishing child–parent dialogues on alcohol and in moderating youth consumption. They make the point, however, in line with the recommendations above, that this will require supporting

parents to ensure they develop only moderate drinking behaviours in their children and only when appropriate.

The task is to replace the cultural norm of (and therefore the resulting peer support for) bingeing and other forms for drinking dangerously, with positive parental role models for sensible alcohol consumption. This may include teenage children drinking alcohol with their parents during meals or elsewhere, in moderation, in order to educate them about alcohol use.

Given this weight of evidence, the recent Chief Medical Officers' Guidance for parents and children, issued for consultation in January 2009, is to be welcomed (CMO, 2009). That guidance recommends five points:

1. An alcohol-free childhood is the healthiest and best option – if children drink alcohol, it shouldn't be before they reach 15 years of age.
2. For those aged 15 to 17 years, alcohol consumption should always be with the guidance of a parent or carer or in a supervised environment.
3. Parents and young people should be aware that drinking, even at age 15 or older, can be hazardous to health and not drinking is the healthiest option for young people. If children aged 15-–17 consume alcohol, they should do so infrequently and certainly on no more than one day a week.
4. The importance of parental influences on children's alcohol use should be communicated to parents, carers and professionals. Parents and carers need advice on how to respond to alcohol use and misuse by children.
5. Support services must be available for children and young people who have alcohol related problems and their parents.

In line with the conclusions of this present review, the guidance aims to support parents, give them the confidence to set boundaries and to help them engage with young people about drinking and risks associated with it. Encouragingly, the results of the consultation, published in July 2009 (DCSF, 2009) show that there is a broad base of support for these guidelines. Over 26,000 responses were received to the consultation, with a large proportion of the responses coming from young people themselves as well as from parents. These responses show that parents and young people mostly agree with the CMO's guidance which suggests that young people

should not consume alcohol under the age of 15 and that between 15 and 17 any alcohol consumption should be with the guidance or supervision of parents and carers. There was a broad level of agreement over there being a clear need for government advice and information for parents; and respondents were very clear that Government had a role to play on the issue and that parents were keen for more support and information.

- Parents need to be encouraged to create a strong family life and family bonds, family values and family concern, family rules and family supervision, and a balance between family care and family control. The review above has demonstrated the wealth of evidence that shows that this is the clearest way of both delaying onset (outside of home) and ensuring that drinking, once started, will be less excessive, and less likely to lead to longer-term problems. The focus on these elements is the main reason that the Strengthening Families Programme, and other family-oriented programmes, seem to work.

- As well as encouragement, parents may need actual help. One suggestion might be that family programmes are not only offered and delivered to vulnerable families as per the NICE Guidance, but to everyone – a universal prevention programme. Almost all of the research reviewed in the earlier section of this review on family factors shows that these are vital, and yet many parents and families will be less than perfect on every one of those family factor dimensions. In a way that is similar to the clash of paradigms related to 'problem families' versus 'societal ills' as the cause of early onset drinking and problems. At present there is a dichotomous division between 'problem families' and 'non-problem families', but in reality there is an immense continuum along which all families and parents will lie, with a relatively arbitrary cut off deciding on who is 'a case', a 'problem family'. In reality, almost all families and parents will have deficits on at least some of these family factors, and parenting skills training and family-management intervention strategies are the things most likely to delay adolescent alcohol initiation and prevent later misuse.

- Such universal prevention programmes need to be started young, not when families are starting to consider how to prevent teenage drinking. As Kaplow et al (2002) showed in their study of early onset drinking, preventative interventions aimed at influencing the children through their parents need to be started when children are very young. Kaplow et al found that children with none of the risk factors which they had identified when the child was aged three had less than a 10 per cent chance of initiating substance use by age 12, whereas children with two or more risk factors at age three had greater than a 50 per cent chance of initiating substance use by age 12. Assisting parents to develop these effective parenting and family management skills when families are new and children are young will mean that they become embedded as the normal way that the family works and interacts, and that the family does not have to unlearn old and less helpful ways of working. Enabling families to function better throughout a child's life will not only help delay initiation into alcohol use, it will assist in preventing a wide range of other children's problems which are associated with less optimal family functioning.

- Alcohol purchasing. Another way that cultural norms about age of onset and regularity of excessive drinking have been derailed is that the expectation of early drinking is not only held by children themselves and by their parents, it is condoned or colluded with by society as a whole: it is remarkably easy for young people (even very young ones) to be able to purchase alcohol. As SHEU (2007) reported (p 61), the off-licence remains the most important source of purchased alcohol, especially for the 14–15-year-olds, followed by the supermarket. As they commented when considering their results: "*This is of course illegal, but they* [ie the young people surveyed] *still keep telling us they are able to make such purchases. All the cigarettes, alcohol and drugs used by young people are ultimately obtained from adults*" (p 61).

Although under-18s cannot normally buy alcohol legally, the Youth Lifestyles Survey in 1998/9 found that 63 per cent of 16–17-year-olds, and even 10 per cent of 12–15s, who had drunk in the last year, usually bought their alcohol themselves. Only a third of under-18s who tried to buy alcohol reported that retailers had refused to sell to

them on at least one occasion in the past year. The most popular places where under-18s try to buy alcohol are pubs, bars and nightclubs and they are normally successful (Harrington, 2000).

Almost 10 years on from the 1998/9 survey, this is still happening. A 2006 Home Office report (Home Office, 2006) suggested that around 13 per cent of 10 to 15-year-olds who have drunk alcohol in the past year have tried to buy alcohol (illegally) from a shop, and 11 per cent from a bar or a pub in the last 12 months. For 16 to 18-year-olds, the figures rise to 47 per cent and 59 per cent respectively. The report also suggested that most of those who had attempted to buy alcohol illegally had been successful at least once, and some had been successful much more frequently. In 2007, one news website reported that

> "*Police have expressed disappointment after half of the premises they tested in Leicester sold alcohol to people aged under 18. Two off-licences, five bars and one restaurant in the city centre sold alcohol to an underage mystery shopper during recent test purchases. Each salesperson was issued with an £80 fixed penalty notice. Officers said they were talking to managers at the premises concerned to see if further action would be taken. PC John Webb, said: 'It was very disappointing to see so many businesses still selling alcohol to someone who is so obviously under the age of 18. Hopefully the message is now getting through to licensees and their staff that the sale of alcohol to under-18s will not be tolerated.' A 15-year-old boy and a girl, 16, visited 18 premises as part of the police operation*" BBC News website, (http://news.bbc.co.uk/nol/ukfs_news/hi/newsid_7560000/newsid_7565000/7565082.stm), Page last updated at 10:27 GMT, Saturday, 16 August 2008 11:27 UK

This is not an isolated case: recent Government figures (Underage Sales, 2007) show that 40 per cent of licensed premises from a sample across England and Wales failed to ask for identification on the first visit by the inspection team (although that percentage reduced on a second visit following an official warning, and reduced further on a third visit). There certainly is an argument to be made that, by continually failing to prosecute those shops who do sell alcohol to minors, society has allowed a culture of impunity to form, and has contributed to the cultural norm that drinking by children and young people is allowable.

This relates to the wider issue of alcohol and its availability to children (Ogilvie et al, 2005). Ogilvie et al show that alcohol is widely available for sale, and that the real price of alcohol in the UK has halved since the 1960s, with consumption by adults rising in parallel with increasing affordability and increasing density and opening hours of sales outlets. They also cite evidence showing that around 80 per cent of 15-year-olds in the UK perceive alcoholic drinks to be very or fairly easy to obtain. Although under-18s may not legally buy alcohol in most circumstances, only around half of 12–15-year-olds who have consumed alcohol never buy it: all the rest have and do buy alcohol. Ogilvie et al discuss a number of ways of controlling the availability of alcohol to young people, including price, licensing, and sales. With *price*, they state that demand for alcohol is price-sensitive with, in the UK, a 10 per cent increase in price being estimated to reduce demand for beer by about 5 per cent (for drinking on the premises) or about 10 per cent (in off-licences), for wine by about 8 per cent, and for spirits by about 13 per cent. Ogilvie et al suggest that some, but not all, reviews have concluded that young people may be more sensitive to price than older adults. With *licensing*, they argue that several controlled and uncontrolled studies in Nordic countries with state alcohol monopolies have shown that major relaxations in controls on beer strength or sales outlets were followed by increases in alcohol consumption (and, in one study, drunkenness and alcohol-related hospital admissions), or conversely that consumption fell after controls were re-introduced. US studies have also shown an association between outlet density, alcohol consumption, and fatal road crashes. However, they say, the effects of marginal changes in availability when alcohol is already widely available are much less clear. With *sales*, they show that two systematic reviews of controlled before-and-after studies have concluded that raising the minimum purchase age reduces consumption and alcohol-related road crashes among young people, and that enforcement substantially increases the effectiveness of the law. Most evidence comes from US studies of varying the minimum purchase age within the range 18 to 21, but one Danish study has also shown a decrease in consumption and drunkenness following the introduction of a minimum purchase age of 15 for beer where previously there had been none. Intensive staff training coupled with rigorous enforcement can reduce under-age sales and intoxication among customers. Unenforced voluntary codes of practice have not been shown to be effective.

The issues of price and availability and their twinned effects on young people's purchasing, and on the implicit agreement society provides for young people's drinking, is taken up by Alcohol Concern in their report, *Cheap at Twice the Price: Young People, Purchasing Power And Alcohol* (Alcohol Concern, 2007c). In this report they show that children's pocket money had increased by 200 per cent over the last 20 years, and that it now costs less than an average week's pocket money to buy *three* or *four times* (depending on whether one uses male or female adult limits) the recommended *adult* limit of alcohol in some supermarkets. They show that the average pocket money in 2007 for 12–16 year olds was £9.53. A combination of rising disposable income and stable alcohol prices means that alcohol is now 65 per cent more affordable to buy than it was twenty years ago.

In November 2007 Alcohol Concern collected price information from random branches throughout London of the supermarket chains that had most frequently failed the Home Office's 2006 test purchasing campaign. The aim was to discover how far a teenager's allowance could actually go for those who manage to buy alcohol, either in person, or through a proxy. For those that are successful, very low prices enable them to buy as much as three times the daily recommended limits for *adult* men and more than four times the recommended limit for women. Alcohol Concern say that the results from the 2006 test purchasing campaign "*make it clear that despite some progress, many young people are still able to buy alcohol from supermarkets. For those that are successful, very low prices enable them to buy as much as 4 times the adult, daily recommended limits for their Friday and Saturday night revels*" (p 7). They also make the point that, as well as the inadequate systems in some premises that permit young people to buy alcohol illegally, a large proportion of young people buy their alcohol through (presumably older) friends and relatives, and there may be scope to more actively enforce the laws meant to prevent this practice.

Nevertheless, Alcohol Concern conclude that, regardless of whether the young person buys it themselves or through a proxy, the fact that they can source large quantities of alcohol for less than £10 remains one of the major reasons why children and young people continue to consume increasing volumes of alcohol.

All of this is corroborated by Bellis et al's (2007) study of the predictors of risky alcohol consumption in schoolchildren, where they surveyed 10,271 15–16 year olds, 88 per cent of whom drank alcohol. Of the drinkers, 38 per cent usually binged when drinking, 24 per cent were frequent drinkers and 50 per cent drank in public settings (streets and parks, but also bars and clubs). They found that binge, frequent and public drinking were all strongly related to *expendable income* and to *children and young people buying their own alcohol*, as were obtaining alcohol from friends, older siblings and adults outside shops.

It is difficult not to conclude that the real cost of alcohol to young people (a combination of reductions in real price and increases in real income / pocket money) is another key factor in determining whether or not young people drink, and drink to excess. Bellis et al also conclude that

> "*eradicating underage alcohol sales and increased understanding of children's spending (are) key considerations in reducing risky alcohol use*" (p 1).

All of these issues discussed within this section require a coherent National Alcohol Policy which pulls together the research and then suggests policy and practice interventions, as has been done above. Until very recently, the UK National Alcohol Strategy failed to do this. For example, within the current National Alcohol Strategy *Safe, Supportive, Social* (DH, 2007), the word 'prevention' is mentioned only eight times: three of these are about 'crime prevention', one is about a proposed review of NHS spending which it is hoped will inform 'smarter spending decisions, driving local investment in prevention and treatment' (p 7), one is about the prevention of underage sales, one is about the responsibilities of Strategic Health Authorities to ensure that 'health services are commissioned according to need, with a focus on prevention through to healthcare and in partnership with social care' (p 67), one is about the Young People Substance Misuse Grant, and the final one is about how a proposal made in the 2004 National Alcohol Strategy for research to be commissioned 'to review the evidence base for the effectiveness of interventions on alcohol prevention for children and young people both inside and outside the school setting (including youth and leisure facilities)' has been deferred pending the publication of two reports on the findings of the Blueprint research programme which aimed to ensure that future provision of alcohol education in schools addresses attitudes and

behaviour as well as providing information. Furthermore, the National Alcohol Strategy backs away from developing further restrictions on alcohol advertising and it continued the ideas of using only voluntary codes of practice with the alcohol industry.

On the other hand, the Strategy does state that a key task is to provide "*Trusted guidance for parents and young people: authoritative, accessible guidance about what is and what is not safe and sensible in the light of the latest available evidence from the UK and abroad*" (p 7), and it further states that "*The Government will adopt a new national leadership role in which it will challenge the attitudes and practices that underlie cultural attitudes towards alcohol, and it will back this up with a series of marketing campaigns to raise public awareness of the risks associated with drinking too much*" (p 58).

In the last two years, there have been moves to further develop these more positive ideas, with the production of both the Draft Guidance issued by the UK Chief Medical Officers (CMO, 2009) and Youth Alcohol Action Plan (DCSF, 2008). The Youth Alcohol Action Plan focuses on five priorities:

i. Stepping up enforcement activity to address young people drinking in public places.
ii. Taking action with industry on young people and alcohol.
iii. Developing a national consensus on young people and drinking.
iv. Establishing a new partnership with parents on teenage drinking.
v. Supporting young people to make sensible decisions about alcohol.

Alongside this, the Ministerial Foreword to the revised National Alcohol Strategy states that "*We will challenge the idea (among some of the population) that drunken antisocial behaviour is acceptable or normal. For the first time, we will publish clear guidelines for parents and young people about the effects of alcohol and what is not safe and sensible*" (DH, 2007, p 1), and as noted above, the Draft Guidance does this.

Further recommendations to start to deal with the issues raised in this section include:

- An increased use of test purchasing and greater investment in policing underage sales.

- Increased enforcement of immediate and severe penalties for every individual or establishment found to be selling alcohol to young people.
- Universal adoption of age checks for individuals purchasing alcohol who look under 21.
- Advice to parents about monitoring the income and expenditure of children so that there is a better understanding about how much money children have and whether it is being spent appropriately.

Future research needs

Although there has been a great deal of material examined for and cited within this review, many questions still remain unanswered. Some of them are:

- Is drinking behaviour in particular social and economic contexts influenced by cultural norms and processes and if so, how?
- What has drinking alcohol come to represent to those sharing an ethnic identity?
- The following three issues should be addressed by ethnographic research. What is the role that cultural institutions, values, and processes play in:
- (1) protecting against excessive drinking in the general population, as well as particular patterns of drinking among males and females, (2) fostering drinking as a normative behaviour within particular gender and age cohorts and (3) affecting the distribution of particular drinking trajectories (e.g. early versus late onset of drinking, drinking characterised by rapid versus slow escalation, etc). This ethnographic analysis would serve as a complement to assessments by researchers who examine intra-ethnic group differences by examinations of social class, education, residence, racial segregation and acculturation (although there has been remarkably little of this research too, within the UK).
- Parenting styles and respect for elders are two variables highlighted in the USA as important factors influencing smoking behaviour. Beyond noting that these factors may also affect drinking uptake and age of initiation (as covered in the earlier sections of this review), we need to consider how and in what ways they affect young people once they begin drinking. What verbal and nonverbal messages do young people receive from male and female parental figures in different ethnic communities at different points in their drinking trajectories? Once someone

becomes a drinker, are they urged to quit, or to moderate or is excessive behaviour accepted? How does respect for elders influence when and where young people may drink, and how does this differ by not only age and gender, but by employment status? How do cultural sanctions influence patterns and levels of drinking?

- What protective role do associated messages play such as those which emphasise maintaining a positive self image in the face of adversity, and messages which remind young people that one's behaviour reflects not only on their person, but family and community? In what contexts do such messages matter and in what contexts do they fall on deaf ears? In contexts where such messages matter, do they contribute to reported ethnic differences in peer group influence or are other factors involved? And, are there gender and age differences in the ways youth respond to both peer influence and the messages of elders?
- In addition to examining the influence of family and peers it might be useful to focus attention on the influence of other role models. For example, among many different ethnic groups, senior women (mothers, grandmothers, and extended kin) often, but not always, act as effective role models for the young as providers and survivors.
- Another issue worth considering is how core cultural values affect drinking behaviour once drinking has started. For example, the importance accorded to social exchange and reciprocity within different ethnic groups may be an important factor to investigate. Being offered and accepting or refusing a drink within South Indian communities, for example, may carry a locus of meaning far different than within African or Caribbean or mainstream White UK communities, and this meaning may differ by gender.
- Similarly, cultural values may influence peer group norms and boundary setting related to alcohol use. It may be that peers sometimes play a dual role in both encouraging drinking uptake and also limiting where, when and how much friends drink; that is, they are at once a risk and a protective factor that may affect drinking trajectories. The role of peers in establishing boundaries for acceptable behaviour has also been noted. An issue worth exploring is whether peer relations vary within different ethnic groups such that friends are more or less likely to act as boundary setters circumscribing the behaviours of peers, in relation to alcohol?

- What is the impact of aesthetics and style as important cultural factors influencing drinking, because they are often associated with ethnic identity? Do boys and girls within different ethnic groups see using alcohol as enhancing or detrimental to their drinking, in comparison to mainstream White boys and girls? Is drinking equated with style?
- Although socio-cultural events and traditional ceremonies or festivities (such as Christmas, football matches, alcohol within religious ceremonies, etc) are clearly an important part of the socialisation process within any culture and subculture, there is no research clarifying the specific part that they play as influencing children's learning, attitudes and behaviours.
- What are the important family / community contexts and environments which influence children's experiences (eg growing up in families with a drinking/drug problem; 'excluded' families; teetotal families; families or communities with specific religious and cultural beliefs about alcohol; 'deprived' communities etc). Although a lot is known about the specific influence of growing up in families with a drinking/drug problem (eg Velleman and Orford, 1999), much less is known about most of the other areas.

Other key questions include:

- Research into the important outcome variables needs to be undertaken. There is no single outcome measure of youth drinking behaviour that is used in evaluation studies, and no clear understanding of which outcome measures are important predictors of alcohol misuse, morbidity and mortality in later life (Foxcroft et al, 2002).
- The US-based Strengthening Families Programme needs to be piloted in the UK and evaluated on a larger scale and in different settings to confirm the current results and the transferability of the programme to the UK. Cost-effectiveness analyses would be useful (Foxcroft et al, 2002).
- There is a need to fill the current evidence gap in interventions to reduce alcohol misuse in young people.
- There is a clear need for more research into prevention approaches in the UK. One major difference between the UK and the USA is in the existence of national bodies dedicated to substance use research. The National Institute on Drug Abuse,

the National Institute on Alcohol Abuse and Alcoholism, the Center for Substance Abuse Prevention (and there are many others in the USA) have no precedents in the UK. Even much of the good practice that is occasionally supported by new Government funding or directives to others such as Primary Care Trusts or Local Authorities to assist in funding do not support research or even the evaluation of outcomes.

- The review by Jones et al (2007b) identified major gaps in research for most of the groups they identified, and in particular, young people who are (or have been) looked after by local authorities or in foster care; young people who are (or have been) homeless or who move frequently; school excludees and truants; young people involved in commercial sex work; young people with behavioural conduct disorders; young people with mental health problems. For some of these populations there is adequate substance use service provision, and research is therefore needed into the effectiveness of existing approaches. However, for most populations, basic levels of specialist substance use service are required before evaluation research can proceed. They also argue that additional work is also needed to address the gaps in evidence for the majority of secondary outcomes. In particular; identification of the characteristics of an effective intervention facilitator; engagement of young people in interventions; implementation of interventions; wider health inequalities; stigmatisation of substance users; and community cohesion.

Conclusion: It is complicated!

In many ways, the conclusions of this review are similar to those reached by Newburn and Shiner (2001), who highlighted three general approaches to be taken: education; the management and supervision of the 'transition' to drinking outside the home; and changes in the licensing laws, and they make a number of useful suggestions as to how each of these approaches might be undertaken, especially in relation to licensing.

What is clear is that understanding how young people learn about and acquire their attitudes, expectations and intentions towards alcohol are key to thinking about how to change early initiation and subsequent problematic patterns of alcohol consumption. It is equally clear that this learning and acquisition is influenced by a wide range of interrelating major factors: economic and policy factors, media

influences, community factors, peer influences and familial factors, all of which impact on young people's initiation into and then subsequent behaviour towards drinking.

It is equally clear that changing the way that young people and their parents and society think about normative behaviour towards alcohol is a major task, and will only be achieved by intervening on multiple levels, as indicated above. The family has a major role to play, and the state has an equally major role in supporting them and providing universal prevention programmes to do that. But the state also has another major role to play, in intervening in the areas of price, availability, and accessibility.

The fact that efforts will need to be made at multiple levels within society should not be surprising. As Cook (2003) notes, individuals live in multiple social contexts simultaneously, whether they be family, peer, neighbourhood, school or work contexts. In individual lives, it is likely that the forces within any one context that promote healthy human development are correlated with whatever causal forces operate to the same end in other contexts. That is why it is important to consider social contexts, but in combination.

What is needed is an integrated, planned and implemented community prevention system, which draws together what is known about effective parenting training programmes, organisational change programmes in schools, classroom organisation, management, and instructional strategies, classroom curricula for social and emotional competence promotion, multi-component programmes based in schools, community mobilisation, community/school policies, enforcement of laws relating to underage purchasing and selling alcohol to intoxicated people, altering community and cultural norms so that drunken comportment behaviour is not tolerated (and certainly not encouraged), and how to effect policy changes with respect to price, availability and accessibility, and to implement them in a planned fashion. Indeed, there is evidence (Hawkins et al, 2002; Thom and Bayley, 2007; Mistral et al, 2007) that, if integrated multi-component programmes are undertaken, then outcomes can be much superior, and the programmes can be very effective, although there have been no research projects funded to allow for evaluations of sufficient power to test these ideas in a UK context.

TABLES

Table 1: Risk, Protective and Resilience factors for children

Risk Factors

General risk factors

- high levels of family disharmony,
- the presence of domestic violence,
- physical, sexual or emotional abuse,
- inconsistent, ambivalent or neglectful parenting,
- lack of an appropriate balance between 'care' and control' in upbringing,
- lack of parental nurturing,
- chaotic home environment,
- the absence of a stable adult figure (such as a non-using parent, another family member or a teacher),
- parental loss following separation or divorce,
- sibling's (lack of) willingness to drink and actual drinking,
- material deprivation and neglect,
- the family not seeking help,
- parent(s) who misuse drugs/alcohol or suffer from mental health problems.

Substance specific risk factors for children of substance misusers

- both parents being substance misusers,
- substance misuse taking place in the home,
- greater severity of the problem.

Parental drug (as opposed to alcohol) problem specific risk factors

- exposure to and awareness of criminal activity (eg drug dealing),
- presence of the child (though not necessarily in the same room) when drugs are taken,
- witnessing someone inject drugs and seeing paraphernalia (eg lying around the home)

Risk factors related to the individual

- early age of first alcohol / drug use (not sip),
- concurrent use of any substance,
- truancy,
- having been suspended from school,
- perceived poor academic performance,
- low future academic expectations,
- low commitment to school,
- having been in trouble with the police,
- poor coping skills,
- a lack of religious belief,
- friendship with deviant peers,
- favouring peer over family opinion,
- and conduct or anti-social behaviour problems, at home or at school.

Protective Factors

- The presence of a stable adult figure (usually a non substance misuser),

- Close positive bond with at least one adult in a caring role (include parents, older siblings and grandparents),
- Affection from members of their extended families,
- A good support network beyond this,
- Low levels of separation from the primary carer in the first year of life,
- Positive family environments,
- Characteristics and positive care style of parents (a balance between the two dimensions of 'care' and control', where 'care' includes parental support, warmth, nurturance, attachment, acceptance, cohesion, and love; and 'control' includes parental discipline, punishment, supervision, and monitoring); this balance means being responsive, expecting a lot from their children, but also being authoritative (as opposed to permissive, authoritarian, or indifferent),
- Utilisation of rules and consequences, including having clear alcohol-specific rules, and experiencing strong parental supervision or monitoring of behaviour related to those rules,
- Parents having high expectations of them, and clear and open communication of both expectations (in this case about alcohol use (or non-use), but also generally for expectations) and potential disapproval if expectations are not met,
- Parental self-efficacy,
- Spending significant time together as a family,
- Parental modelling of the behaviours expected of or wished for from their children,
- Having family responsibilities,
- Family observing traditions and rituals (cultural, religious, familial),
- Being raised in a small family,
- Larger age gaps between siblings,
- Having a hobby or a creative talent or engagement in outside activities or interests (such as sport, singing, dancing, writing, drama, painting, etc) – anything that can provide an experience of success, and/or approbation from others for the child's efforts,
- Successful school experience,
- Strong bonds with local community / community involvement,
- Easy temperament and disposition,
- Self-monitoring skills and self-control,
- Intellectual capacity,
- A sense of humour,
- Religion or faith in God,
- Positive opportunities at times of life transition, and
- Living in a community where there is a sense of caring, mutual protection.
- Further, much research shows that, if family cohesion and harmony can be maintained in the face of substance misuse (or domestic violence or serious mental health problems), then there is a high chance that the child will *not* go on to have any problems.

Resilience factors

Resilience factors or processes which these protective factors listed above encourage:

- Deliberate planning by the child that their adult life will be different,
- High self-esteem and confidence,
- A sense of direction or mission,
- Self-efficacy,
- An ability to deal with change,
- Skills and values that lead to efficient use of personal ability,
- A good range of social problem-solving skills,

- Aspirations for the future,
- The young person feeling that they have/had choices,
- The young person feeling that they are/were in control of their lives, and
- Previous experience of success and achievement.

(Sources: DrugScope, 1999; Mentor, 2007; Sutherland and Shepherd, 2001; Velleman, 2003; Velleman and Orford, 1999; Velleman and Templeton, 2007; and this review)

Table 2: Developmental Assets (from Scales and Leffert, 1999)

External Assets	**% with assets**
Support	
1. **Family support** – family life provides a high level of love and support	64
2. **Positive family communication** – young person and parents are able to communicate positively	26
3. **Other adult relationships** – young person receives support from 3 or more non-parent adults	41
4. **Caring neighbourhood** – young person experiences caring neighbours	40
5. **Caring school climate** – school provides a caring, encouraging environment	24
6. **Parent involvement in school** – parents are actively involved in helping child succeed in school	29
Empowerment	
7. **Community values youth** – young person perceives that adults in the community value youth	20
8. **Youth as resources** – young people are given useful roles in the community	24
9. **Service to others** – young person serves in the community one hour or more per week	50
10. **Safety** – young person feels safe at home, school, and in the neighbourhood	55
Boundaries and Expectations	
11. **Family boundaries** – family has clear rules and consequences, and monitors children's whereabouts	43
12. **School boundaries** – school provides clear rules and consequences	46
13. **Neighbourhood boundaries** – neighbours take responsibility for monitoring young people's behaviour	46
14. **Adult role models** – parents and other adults model positive, responsible behaviour	27
15. **Positive peer influence** – young person's best friends model responsible behaviour	60
16. **High expectations** – both parents and teachers encourage the young person to do well	41
Constructive use of time	
17. **Creative activities** – young person spends 3 or more hours per week in lessons/practice in music, theatre, or the arts	19
18. **Youth programs** – young person spends 3 or more hours per week in sports, clubs, or organizations at school or in the community	59
19. **Religious community** – young person spends 1 or more hours per week in religious activities	64

20. **Time at home** – young person is out with friends "with nothing special to do" 2 or fewer nights per week	50
Internal Assets	
Commitment to Learning	
21. **Achievement motivation** – young person is motivated to do well in school	63
22. **School engagement** – young person is actively engaged in learning	64
23. **Homework** – young person reports doing at least 1 hour of homework each school day	45
24. **Bonding to school** – young person cares about his/her school	51
25. **Reading for pleasure** – young person reads for pleasure 3 or more hours per week	24
Positive Values	
26. **Caring** – young person places high value on helping other people	43
27. **Equality and social justice** – young person places high value on promoting equality and reducing hunger and poverty	45
28. **Integrity** – young person acts on convictions and stands up for beliefs	63
29. **Honesty** – young person tells the truth, even when it is not easy	63
30. **Responsibility** – young person accepts and takes personal responsibility	60
31. **Restraint** – young person believes it is important not to be sexually active or to use alcohol and drugs	42
Social Competencies	
32. **Planning and decision making** – young person knows how to plan ahead and make choices	29
33. **Interpersonal competence** – young person has empathy, sensitivity, and friendship skills	43
34. **Cultural competence** – young person has knowledge of and comfort with people of different cultural/racial/ethnic backgrounds	35
35. **Resistance skills** – young person can resist negative peer pressure and dangerous situations	37
36. **Peaceful conflict resolution** – young person seeks to resolve conflict non-violently	44
Positive Identity	
37. **Personal power** – young person feels control over "things that happen to me"	45
38. **Self-esteem** – young person reports having high self-esteem	47
39. **Sense of purpose** – young person reports that "my life has a purpose"	55
40. **Positive view of personal future** – young person is optimistic about his/her personal future	70

Table 3: Relation of Assets to High-Risk Behaviour (Leffert, Petersen, Scales, Sharma, Drake, and Blythe, 1998)				
% of High-Risk Behaviours for each range of Assets (with alcohol use highlighted)				
Behaviour	**0–10**	**11–20**	**21–30**	**31–40**
Violence	61	35	16	6
Alcohol Use	***53***	***30***	***11***	***3***
Antisocial Behaviour	52	23	7	1
Tobacco	45	21	6	1
School Problems	43	19	7	2
Driving and Alcohol	42	24	10	4
Illicit Drugs	42	19	6	1
Depression	40	25	13	4
Gambling	34	23	13	6

Appendix One
Brief summaries of key interventions

Adolescent Transition Programme (ATP)

Authors	Dishion and Kavanagh (2000; 2003) Dishion et al (2002; 2003; 2004).
Country	USA
Brief description	Parent training programme, multi-component, uses family, school and peer components. Selected intervention for at risk early adolescents. Family-based within a middle school setting.
Target group	Middle school students (aged 11–14) and their families.
Comments	RCTs (Dishion and Kavanagh 2000; 2003; Dishion et al 2002; 2003; 2004) show programme effective in reducing observed negative parent–child interactions; decreases in anti-social behaviour reported by teachers; decreases in youth smoking at one year.

Strengthening Families Programme (SFP)

Authors	Spoth et al (2001; 2002a; 2002b; 2004; 2005; 2008)
Country	USA
Brief description	Community-based programme for parents and children. Originally developed for use with children aged 6–10 with substance-misusing parents. Age range later extended to 14; and for use with children whose parents did not have problems. Designed to develop specific protective factors and reduce specific risk factors.
Target group	Originally children aged 6–10, currently mainly children aged 10–14, and their parents.
Comments	Extensively tested across different ethnic, socio-cultural groups, rural and urban settings, substance misusing parents and non-substance misusing parents. Number of evaluations (e.g. Molgaard and Spoth, 2001; Spoth et al, 2001, 2002a,b, 2003, 2004, 2005). Findings include postponement of drinking initiation, lower rates of alcohol, tobacco and marijuana use, fewer conduct problems at school compared with controls.

School Health and Alcohol Harm Reduction (SHAHRP)

Authors	McBride et al (2003)
Country	Australia
Brief description	Classroom-based harm reduction programme, conducted in two phases over two years.
Target group	13–17 year olds with varying experience with alcohol
Comments	Results show that that those who were non-drinkers or unsupervised drinkers at baseline became less likely to consume in a risky manner, and that early unsupervised drinkers experience less alcohol-related harm after SHAHRP.

Project Northland

Authors	Perry *e*t al (1996; 2002)
Country	USA
Brief description	Three year community wide multi-level intervention, including school curriculum, parents, teacher training, peer leaders, community mobilisations, media campaign.
Target group	Children aged 11–12 to13–14 at intervention
Comments	Significant impact on past month and past week alcohol use in the intervention group compared with control at 2.5 years, but effect had dissipated at four years. Significant reduction in 'proneness to alcohol, drug and family problems' at three years.

Life Skills Training (LST)

Authors	Botvin et al (2001; 2003)
Country	USA
Brief description	Classroom-based substance use prevention programme with booster sessions. Aims to develop resistance skills, self-esteem, self confidence as well as knowledge.
Target group	Children aged 11–12 at intervention.
Comments	Evidence of positive effects (Botvin et al, 2001; Trudeau et al, 2003). Also evidence of positive effects in younger children (intervention age 8–9) (Botvin et al, 2003). Strongest evidence in relation to drinking to intoxication and heavy smoking.

Alcohol Misuse Prevention Study (AMPS)

Authors	Wynn et al (2000)
Country	USA
Brief description	School-based, focused on reducing alcohol *problems* rather than alcohol use, by improving the pupils' ability to identify and resist peer influences. Block of lessons, booster sessions for two years.
Target group	11–12 at intervention, followed up until 15–16
Comments	Intervention did retard problems but *only* in the minority who had already drunk without adult supervision, i.e. those with the greatest alcohol problems.

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